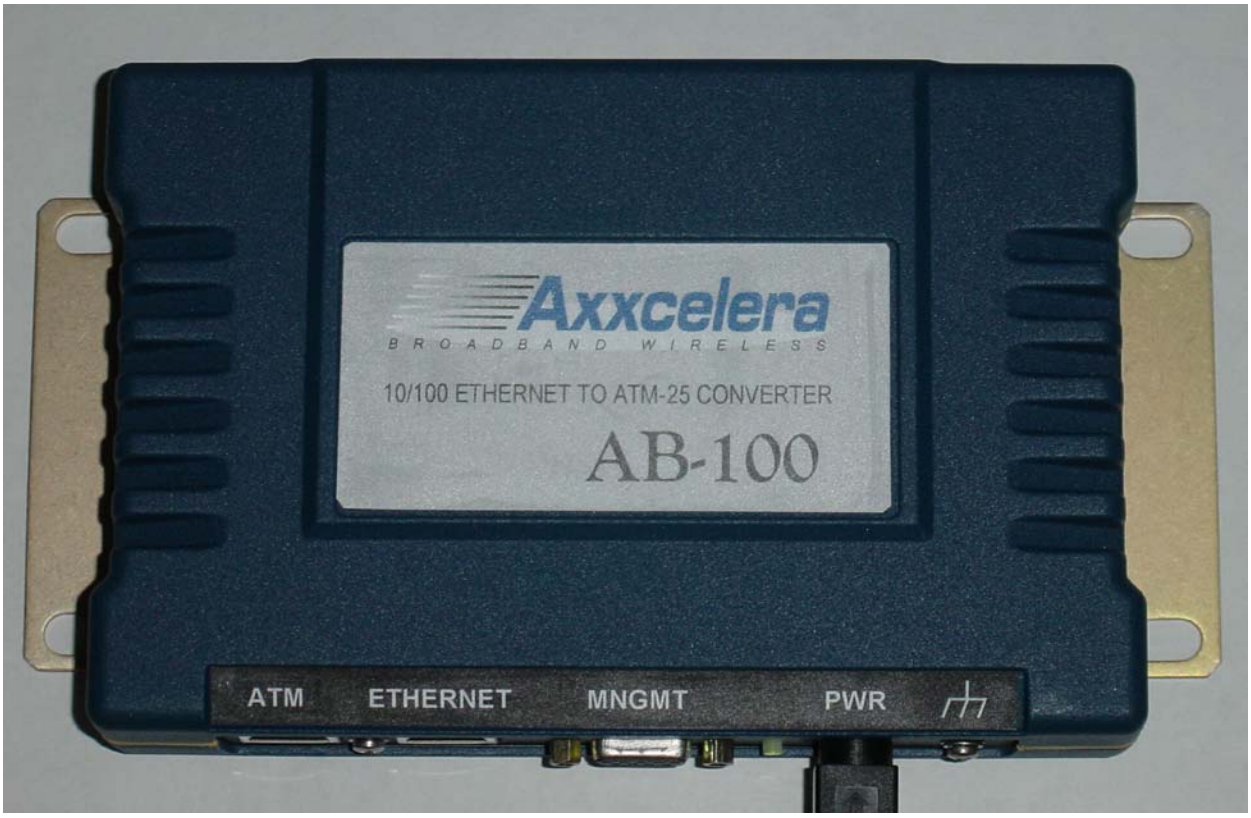
AB-100 User Manual



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Axxcelera Broadband Wireless
175 Science Parkway
Rochester, New York 14620

Telephone (716) 242-9600
Telephone (877) 557-4001
Fax (716) 242-9620

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Section 1

1 Overview

ATM networks have certain specific advantages over Ethernet networks but Ethernet networks have certain advantages over ATM networks. At the heart of these advantages is the acceptance of ATM as a core network technology and the acceptance of Ethernet as an end-consumer protocol. Interfacing these two disparate network protocols typically involves the use of expensive ATM switches and/or Ethernet routers with ATM interface modules.

Axxcelera's AB-Access wireless point-to-multipoint, LAN/WAN appliances are unique in the industry in that they are able to provide either an ATM terrestrial network interface or an Ethernet terrestrial network. Throughput and performance of the AB-Access product is maximized when the Access Point (basestation device) is deployed with an ATM (ATM25) terrestrial interface. Flexibility in the AB-Access product allows an ATM Access Point to communicate with Subscriber Units (customer premise equipment) with Ethernet interfaces. Thus, AB-Access itself serves as a network technology bridge between ATM and Ethernet. But not everyone who deploys AB-Access desires to deploy ATM to the basestation.

AB-100 provides an inexpensive and effective means of performing ATM-to-Ethernet network protocol conversions. Whether deploying the AB-100 as a way to make the most of an AB-Access deployment in a "pure Ethernet" network or as a means of providing wireline ATM25 to Ethernet (10/100 Base-T) conversions, AB-100 serves this task without requiring additional, expensive ATM switches or Ethernet routers.

Ethernet over ATM is not new. Standards exist within the ATM world to coordinate how these networks are to interoperate. These standards define how to terminate ATM networks at Ethernet bridges (layer 2) as well as how to terminate them at IP routers (layer 3). AB-100 supports both of these varieties via the RFC 1483 and RFC 1577 ATM standards and thus is compatible with standard ATM and Ethernet appliances. Because the AB-100 is both an Ethernet device as well as an ATM device, other services such as firewall, NAT, DHCP server, and DNS relay are also supported.

Section 2

2 Installation

2.1 Factory Defaults

Username: atmos
Password: atmos

Ethernet IP Address: 192.168.4.2 /24

2.2 Back Panel

2.2.1 ATM

AnATM 25 UTP connection with LEDs that diplay link and traffic status.

2.2.2 Ethernet

A 10/100 BT Ethernet UTP connection with LEDs that display link and traffic status.

2.2.3 MNGMT

A DB-9 female connection that provides serial management to the unit.

2.2.4 LED

LED that displays status of unit. A green LED indicates the unit is powered on. A orange LED indicates the unit is booting up.

2.2.5 PWR

A 48VDC power connector.

2.2.6 Ground

Grounding screw to connect grounding cable to.

2.3 Technical Specifications

Temperature Range:	-20°C to +50°C
Humidity:	95% at +40°C (104°F); non-condensing
Primary Power:	40-70 VDC (+48VDC) typ: 48V (max 150mA, typ: 85mA)
External Power Supply Options:	100-240V/100-120VA (50/60Hz)
Weight:	0.9 kg / 2 lb
Case:	Cast Aluminum

NOTE: AB-100 should only be used with the provided power supply unless you have consulted with an Axxcelera Engineer first. Using another power source could damage the unit if not connected properly.

2.4 Console Port

AB-100 has a DB-9 female serial port on it. The serial cable should be a straight DB-9 male to DB-9 female. To gain access to the console of your AB-100, configure your terminal console software with the following settings.

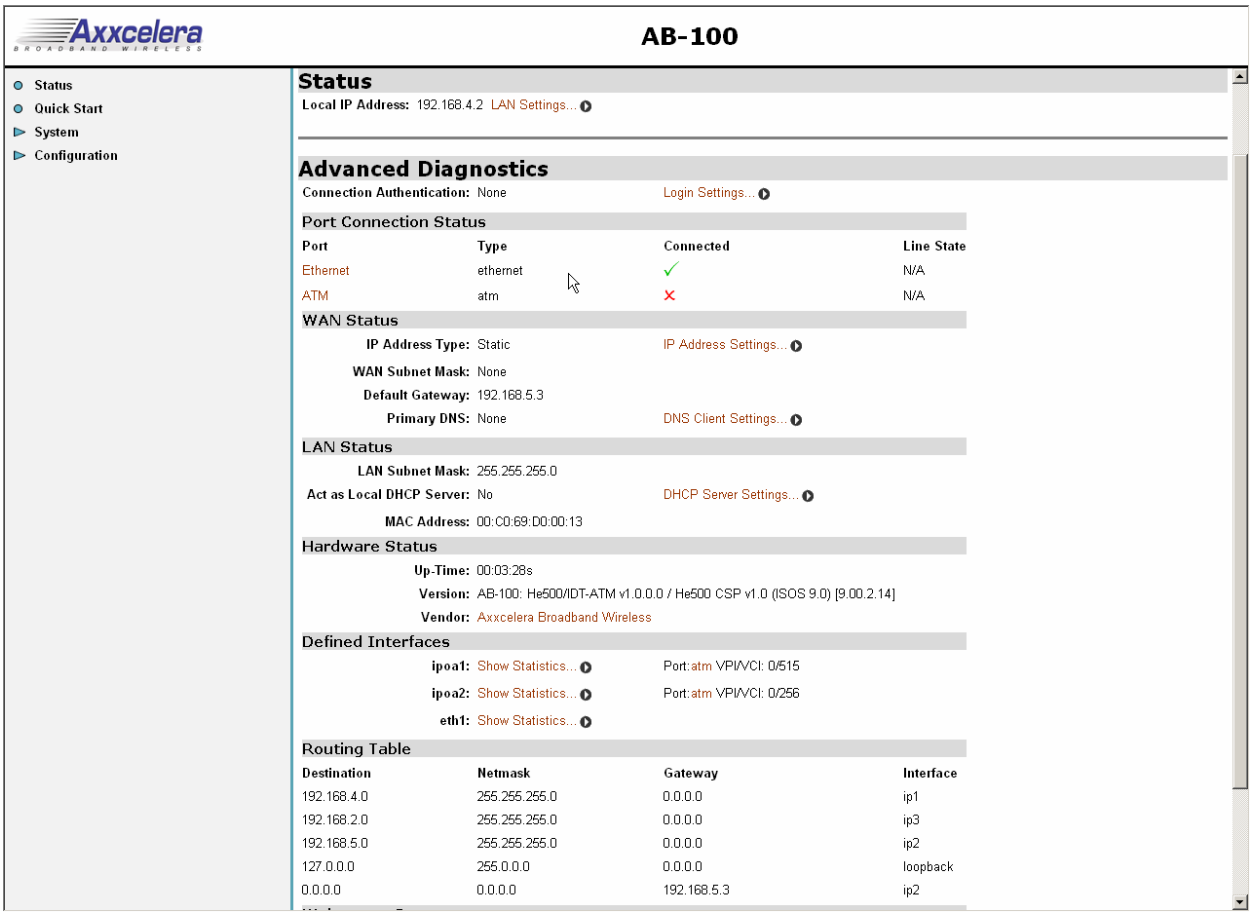
Name	Value
Bps	9600
Data Bits	8
Parity	None
Stop bits	1
Flow Control	None

Section 3

3 Web-based Configuration

The web interface can be accessed by entering the IP address of the unit in the URL box. The factory default IP address is 192.168.4.2.

3.1 Status

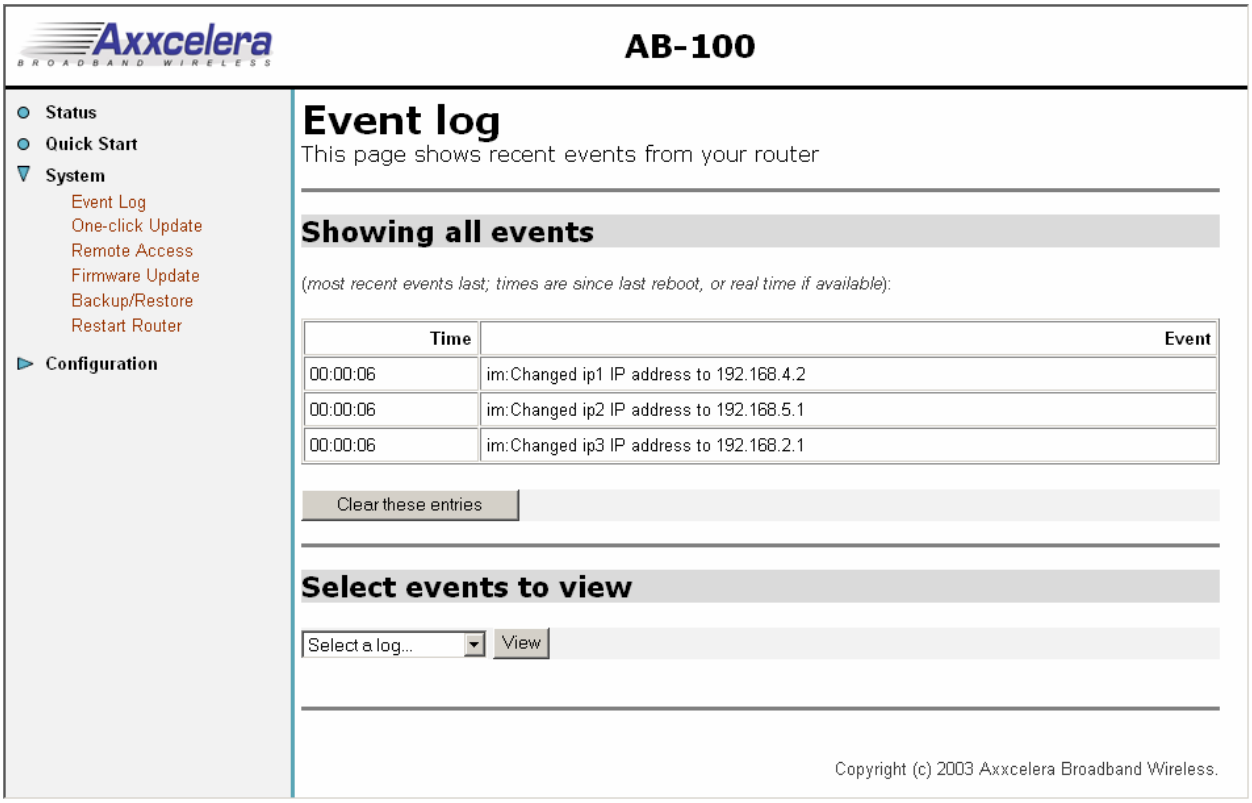


3.2 Quick Start

3.3 System

3.3.1 Event Log

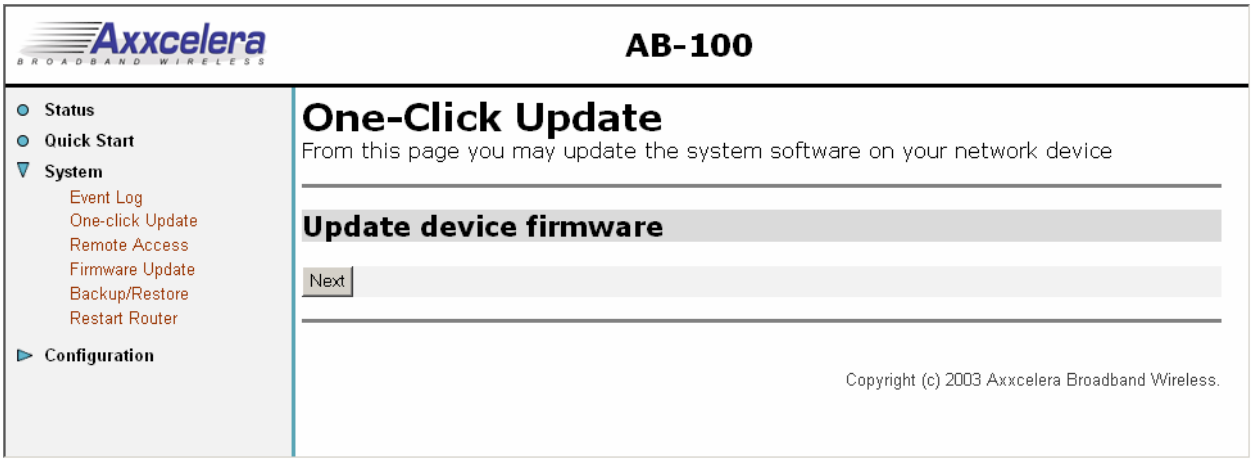
The *Event Log* page is displayed whenever an error occurs or can be accessed via the System menu by clicking on *Event Log*. The following page is displayed:



3.3.2 One-click update

This allows you to use one-click to download new AB-100 images from a remote HTTP server. You do not need to browse for the correct file to upload, which you must do when using the *Update* process.

1. From the System menu, click on One-click update. The following page is displayed:



2. Click on the Next button. The Auto Update page is displayed. This page contains the following information:

- *Existing software version*: the software version that you are currently using.
- *Available software version*: the software version available for download.
- *Download from*: the available software version's source address.
- *Overview*: URL that can be linked to a web page detailing additional information about this software version.

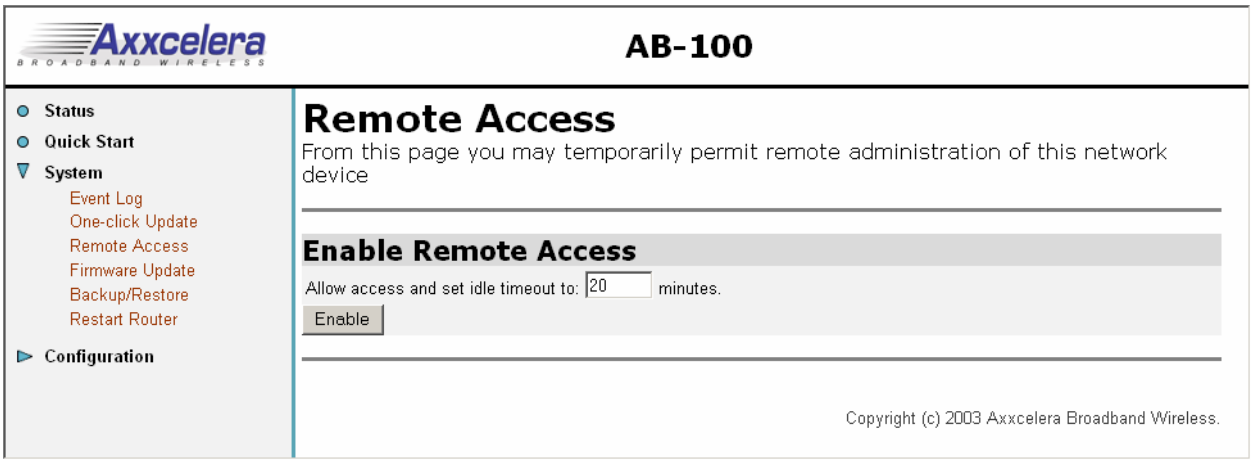
3. To update device firmware, click on *OK*. The Firmware Update page is refreshed. The page contains two progress bars:
   - The first progress bar displays how long it is taking to fetch the new software version from the web server.
   - Once the software has been retrieved, the second progress bar displays how long it is taking to write the new software version to Flash.
4. Once the file has been written to Flash, the Auto Update page is refreshed. The page confirms completion of the update and asks you to restart your AB-100 in order to use the new firmware. Click on *Restart*.

3.3.3 Remote Access

This allows you to enable temporary remote access to your AB-100 using Network Address Translation (NAT).

NOTE: In order to configure remote access, you first need to enable the firewall and create an external to internal firewall policy. For more information, see *Security*.

1. Once you have configured *Security*, from the *System* menu, click on *Remote Access* to display the following.

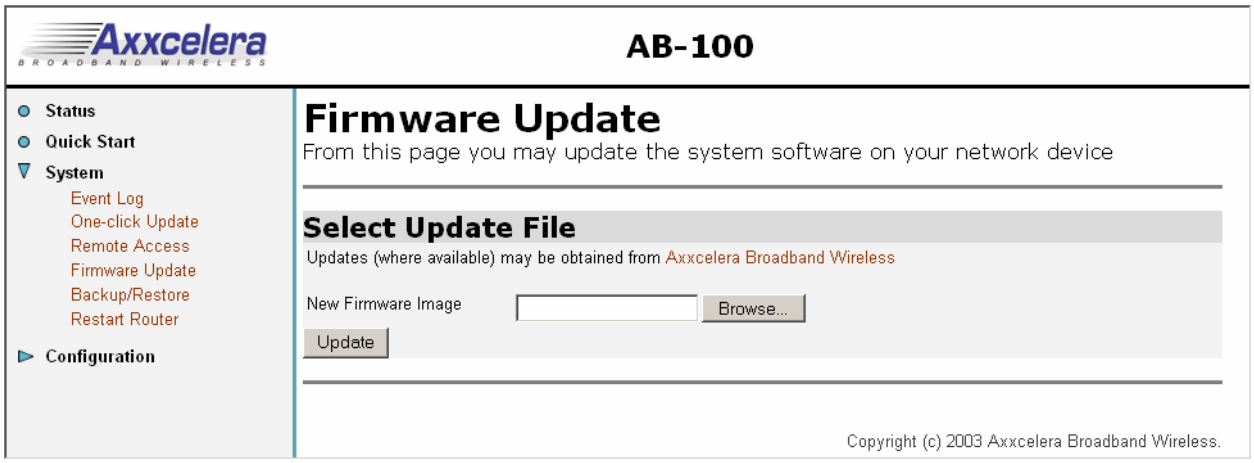


2. Type in the length of time that you want to allow remote access for. Click on *Enable*.
3. The *Remote Access* page is displayed, confirming the number of seconds remaining for remote access. There is also a *Disable* button that allows you to stop remote access before the specified time ends.

3.3.4 Firmware Update

This option allows you to upload firmware images to the AB-100 using HTTP. A .tar archive is uploaded to the RAM of your AB-100. The archive is unpacked automatically, files are validated and then written to Flash memory.

1. From the *System* menu, click *Firmware Update*. The following page is displayed:



2. Type in the network location of the new firmware image that you want to upload, or use the *Browse* button to browse through the network and select the file. Click on *Update*.
3. Once the file has been uploaded to the RAM of your AB-100, it is written to Flash. A status page is displayed confirming that the upload is complete and telling you how much of the file (in bytes and as a percentage) has been written to Flash.
4. Once the file has been written to Flash, the *Firmware Update* page is refreshed. The page confirms completion to the update and asks you to restart your AB-100 in order to use the new firmware. Click on *Restart Router*.

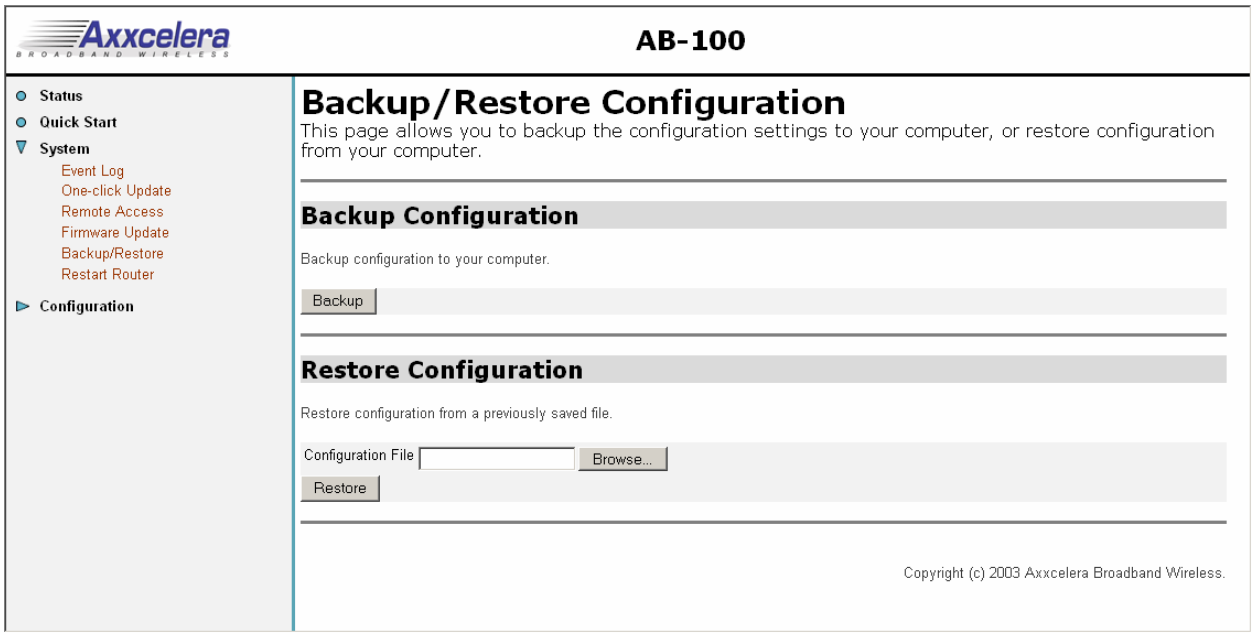
   NOTE: Updating your firmware could take up to 4 minutes to complete.

3.3.5 Backup/Restore

This page allows you to backup your configuration to, or restore it from your computer.

3.3.5.1 Backing up your configuration

1. From the System menu, click on *Backup/Restore*. The following page is displayed:



2. From the *Backup Configuration* section, click on the *Backup* button. The File Download window is displayed. Click to select the *Save this file to disk* radio button. From the *Save As* window, select a file in which to save your backup configuration. Click on *Save*.

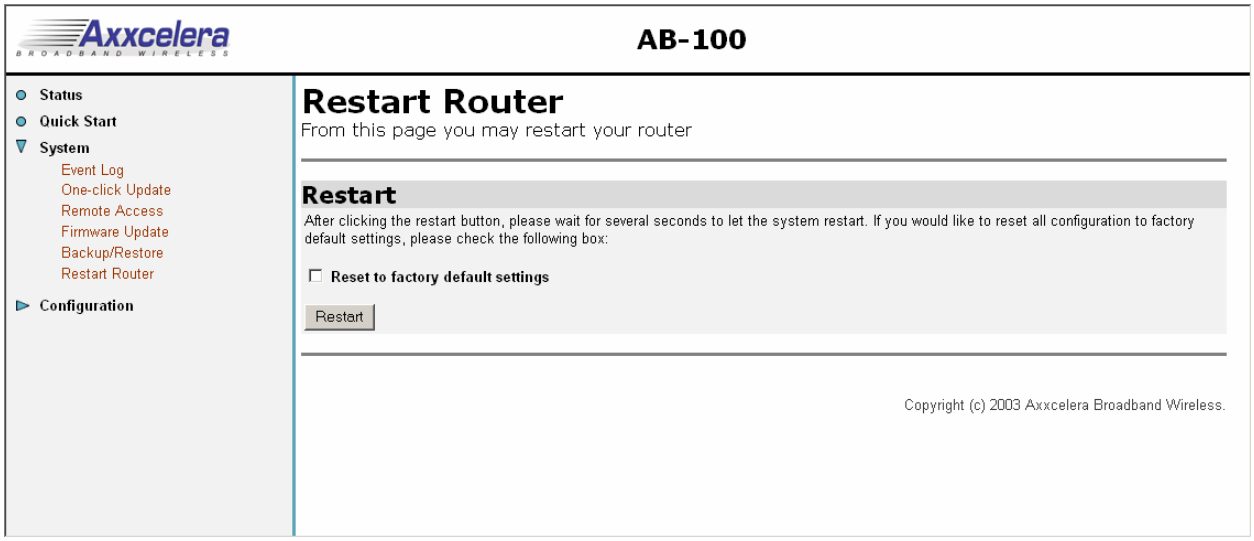
3.3.5.2 Restoring your configuration

1. From the *System* menu, click on *Backup/Restore*.
2. In the *Restore Configuration* section, click in the *Configuration File* text box and type the network path of the file that you wish to restore. If you do not know the path details, click on the *Browse* button and locate the file using the *Choose file* box.
3. Click on the *Restore* button. The page is refreshed with a *Configuration Restored* message and details of the number of bytes uploaded.

3.3.6 Restart Router

This page allows you to restart your AB-100 System.

1. From the System menu, click on *Restart Router*. The following page is displayed:


AB-100
Status
Quick Start
System
Event Log
One-click Update
Remote Access
Firmware Update
Backup/Restore
Restart Router
Configuration
Restart Router
From this page you may restart your router
Restart
After clicking the restart button, please wait for several seconds to let the system restart. If you would like to reset all configuration to factory default settings, please check the following box:
Reset to factory default settings
Restart
Copyright (c) 2003 Axxcelera Broadband Wireless.

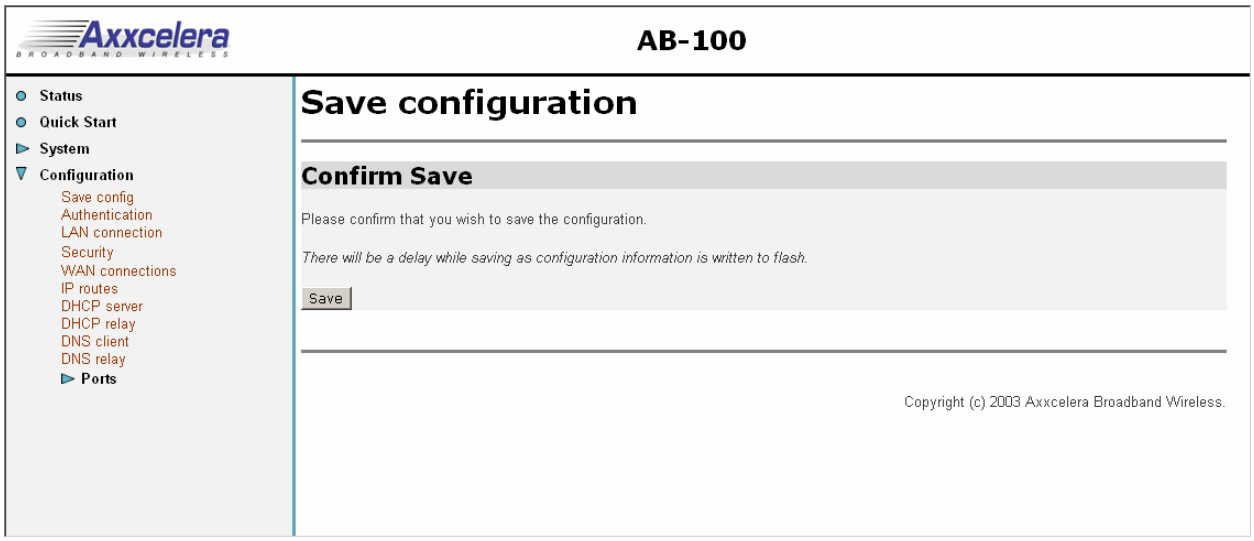
2. Click on the *Restar*t button to reset the AB-100 system. The Restart page also provides you with the option of restarting and restoring the factory default settings. Click on the *Reset to factory default settings* box to check it, then click on the *Restart* button. Read the console status output to check how the reset is progressing.
3. Once the login and password prompt is displayed at the console, you can login as usual (with login = atmos, password = atmos), then refresh the browser that is open to the AB-100 web page. The *Status* page is displayed and your AB-100 system has been reset.

3.4 Configuration

3.4.1 Save config

To save your current configuration to Flash memory:

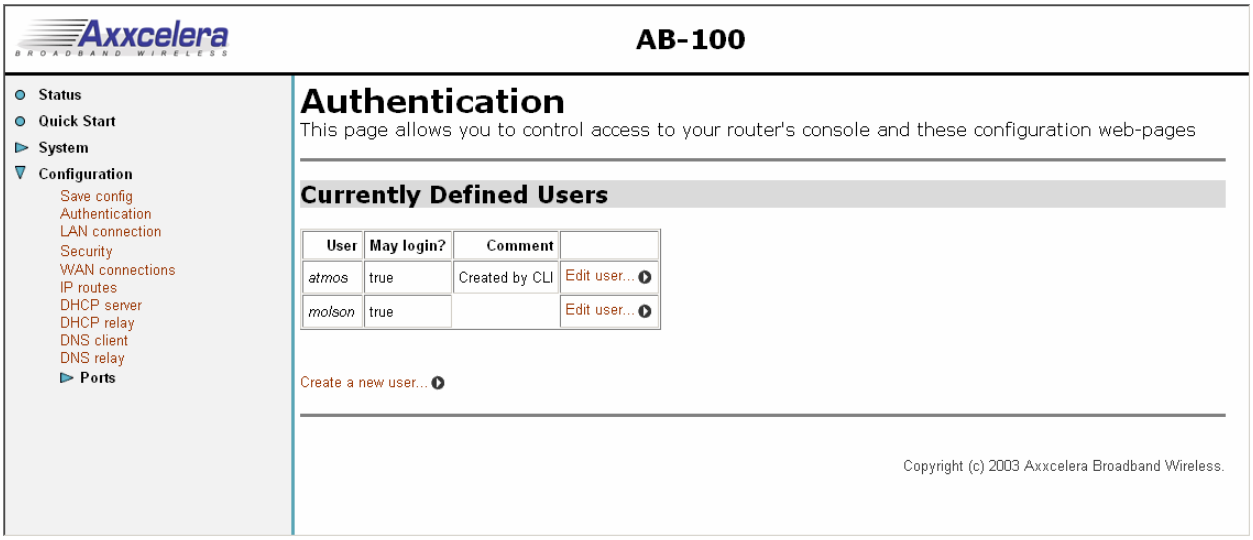
1. From the *Configuration* menu, click on *Save config*. The following page is displayed:



2. Click on the *Save* button to save your current configuration in the *im.conf* file in the FlashFS. After a short time the configuration is saved and the following confirmation message is displayed:
   Saved information model to file //flashfs/im.conf

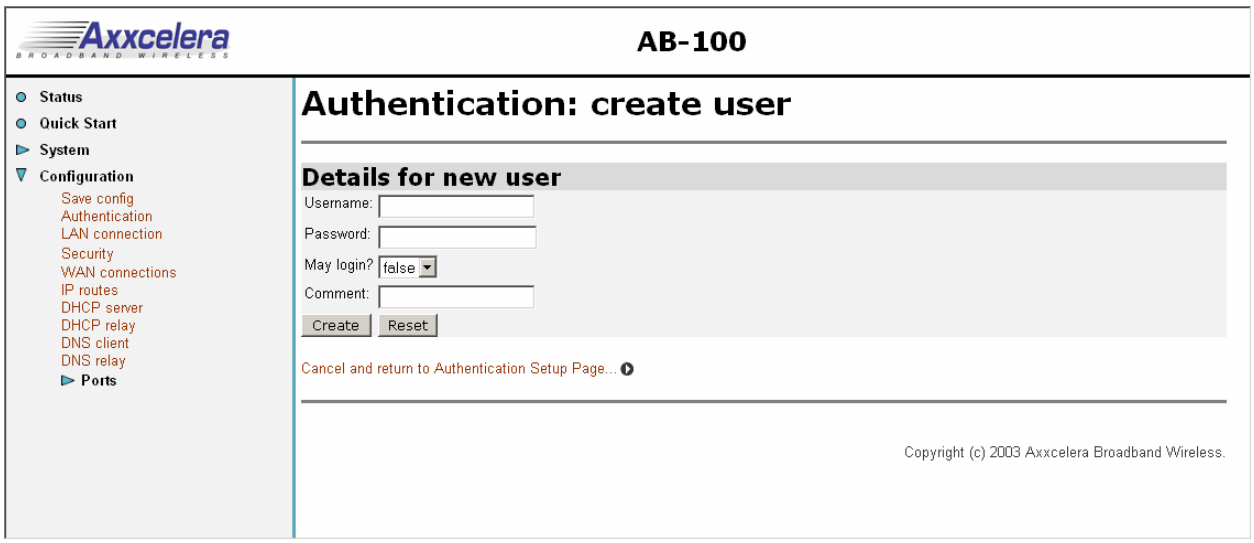
3.4.2 Authentication

This option allows you to administer accounts for users who access the AB-100. From the Configuration menu, click *Authentication*. The following page is displayed:



3.4.2.1 Creating a new login account

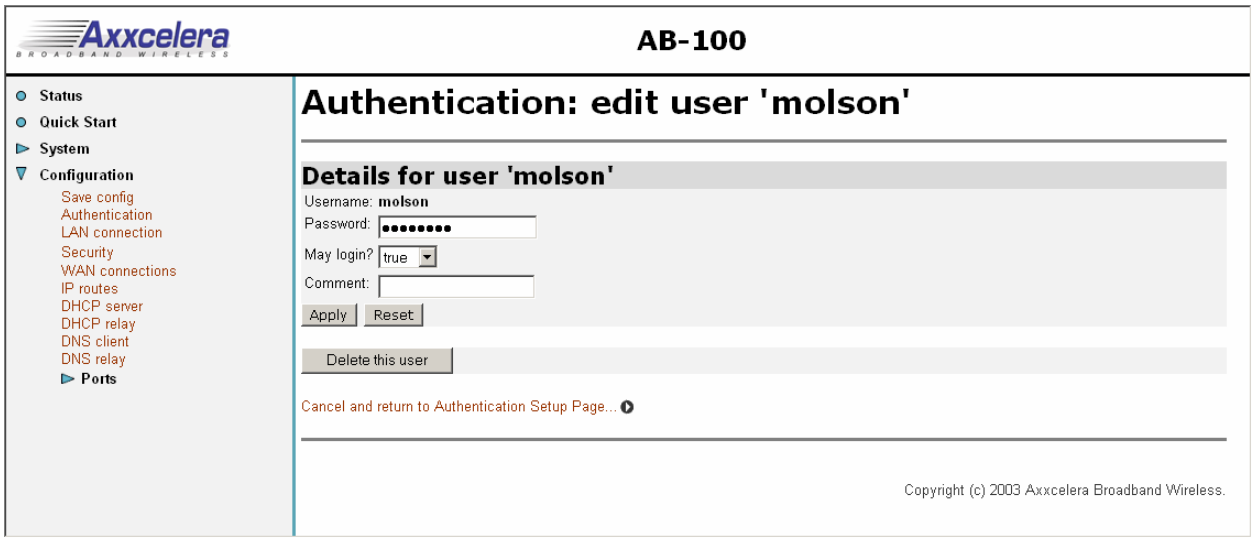
1. Click on the *Create a new user* button. The following page is displayed:



2. Type details for the new user into the username, password and comment text boxes and select *May login?* option:
    - *true* means that the user can login but not dialin
    - *false* means that the user can dialin but not login
3. Click on the *Create* button. The *Authentication* page is displayed. The table now contains details for the user that you have just created.

3.4.2.2 Editing/deleting a login account

1. The Authentication page table contains an Edit user hyperlink for each user account entry. Click on a link. The following page is displayed:



This page allows you to:

- Update details for a specific user account. Modify the necessary text boxes then click on the *Apply* button.
- Delete a user account. Click on the *Delete this user* button.

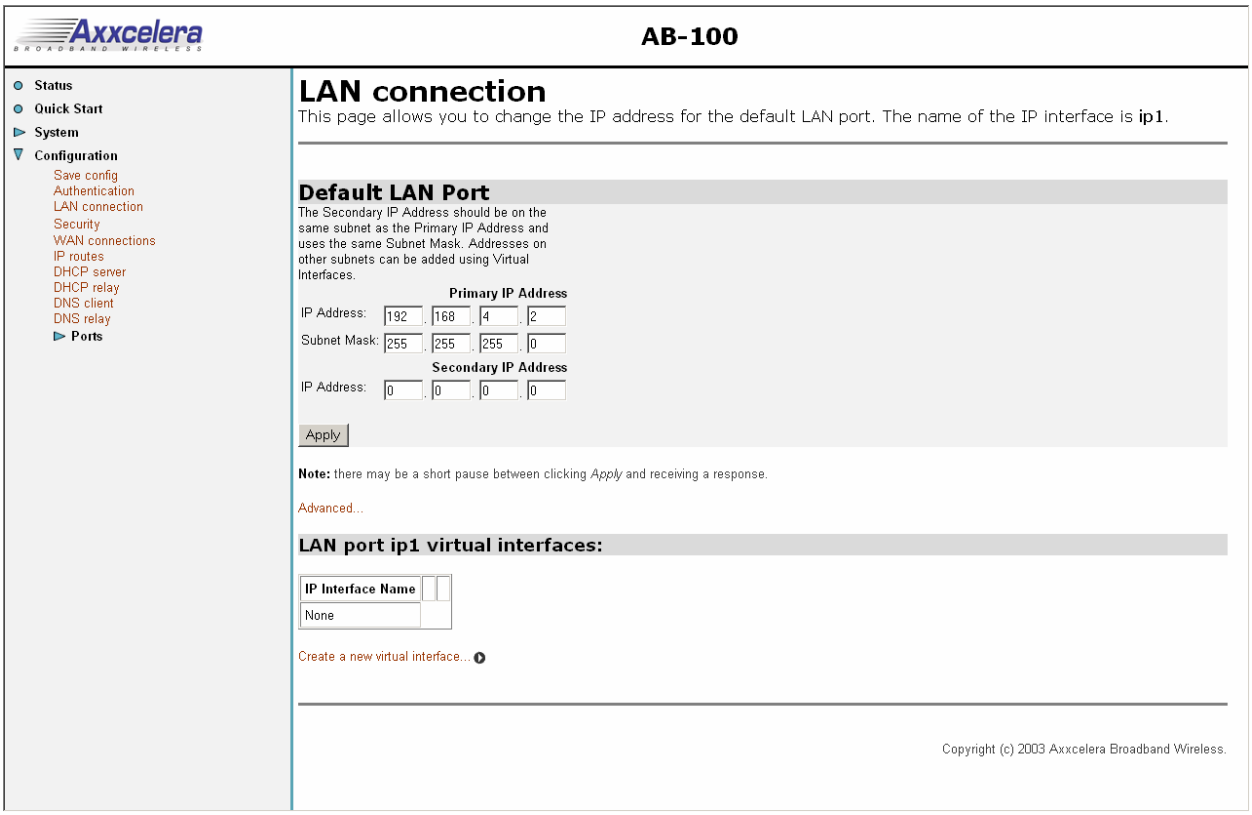
2. Once you have edited or deleted a user account, the *Authentication* page is displayed and the table reflects any changes that you have made on the *edit user* page.

3.4.3 LAN connection

This option allows you to:

- Configure the IP address and subnet of the default LAN connection to the AB-100.
- Configure a secondary IP address on the same subnet as the primary IP address.
- Create virtual interfaces; multiple virtual interfaces can be associated with the existing primary LAN interface.

From the *Configuration* menu, click on *LAN connections*. The following page is displayed:


AB-100
Status
Quick Start
System
Configuration
Save config
Authentication
LAN connection
Security
WAN connections
IP routes
DHCP server
DHCP relay
DNS client
DNS relay
Ports
LAN connection
This page allows you to change the IP address for the default LAN port. The name of the IP interface is ip1.
Default LAN Port
The Secondary IP Address should be on the same subnet as the Primary IP Address and uses the same Subnet Mask. Addresses on other subnets can be added using Virtual Interfaces.
Primary IP Address
IP Address: 192 . 168 . 4 . 2
Subnet Mask: 255 . 255 . 255 . 0
Secondary IP Address
IP Address: 0 . 0 . 0 . 0
Apply
Note: there may be a short pause between clicking Apply and receiving a response.
Advanced...
LAN port ip1 virtual interfaces:
IP Interface Name
None
Create a new virtual interface...
Copyright (c) 2003 Axxcelera Broadband Wireless.

Configuring primary and secondary LAN connections

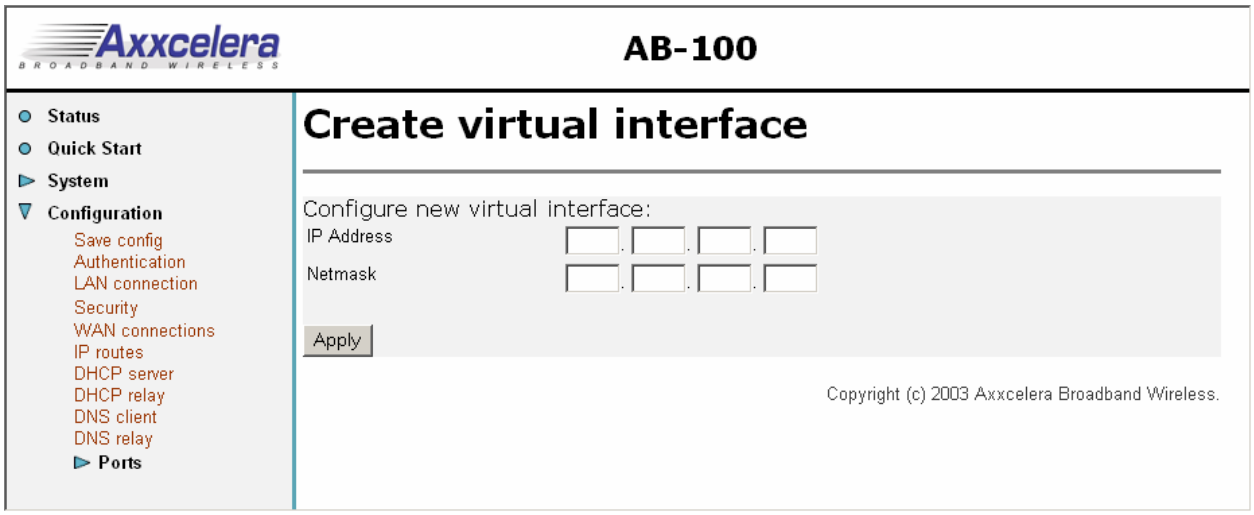
1. The Default LAN Port section contains two subsections:
    a. IP address and subnet mask details of your primary LAN connection. To edit these details, click in the appropriate text box and type new primary address details.
    b. Secondary IP address details. To create/configure a secondary IP address, click in the *Secondary IP Address* text box and type new address details.
2. Once you have configured the IP address(es), click on the *Apply* button. A message is displayed confirming that your address information is being updated. If you have changed the primary IP address, you may need to enter the new address in your web browser address box.

3.4.3.1 Advanced…

See *Advanced Options* section.

3.4.3.2 Creating virtual interfaces

1. Click on the *Create a new virtual interface…* hyperlink at the bottom of the *LAN connections* page. The following page is displayed:



2. On the Create virtual interface page, type the IP address and netmask of the virtual interface, then click on the *Apply* button.
3. The LAN connections page is displayed. The virtual interfaces section contains a table listing the names of the virtual interface(s). Each virtual interface is called item# by default.
4. Each virtual interface name has an *Edit* and *Delete* link associated with it.

   To edit a service:

   a. Click on the *Edit* link.
   b. Change the options for the existing virtual interface, then click on *Change*. The page is reset and the new values are displayed.

   NOTE: All options are explained in detail in section *Advanced Options*.

   To delete a service:

   a. Click on the *Delete* link.
   b. Check the details displayed, then click on the *Delete this connection* button.

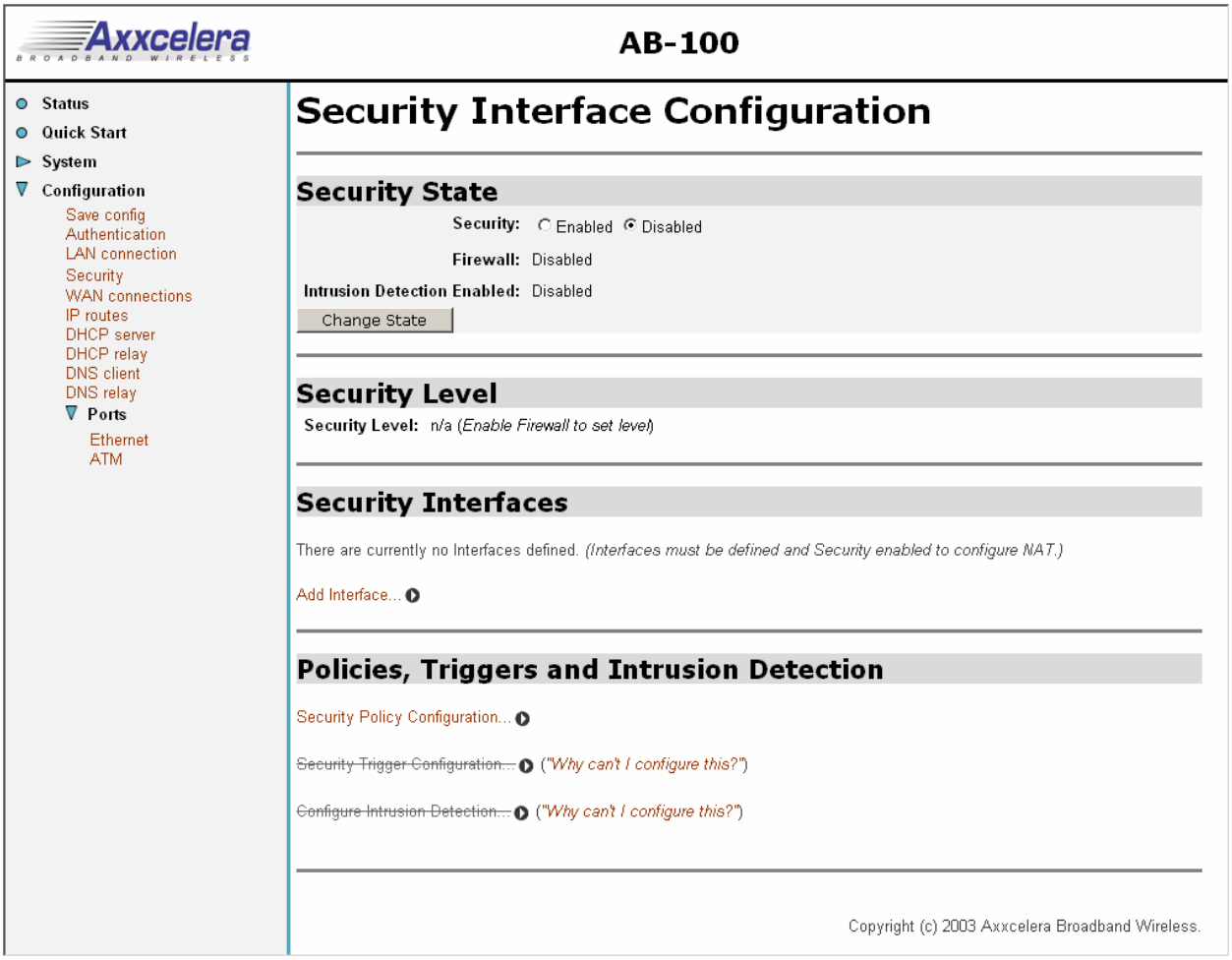
3.4.4 Security

This option allows you to configure Security, NAT and Firewall:

- Security – AB-100 allows you to:
  - Enable Security, see *Enabling Security*.
  - Configure Security interfaces; *Configuring security interfaces*.
  - Configure triggers, see *Configuring triggers*.
- NAT – AB-100 allows you to:
  - Enable NAT between interfaces; see *Configuring NAT*.
  - Configure global addresses; see *Configuring NAT global addresses*.
  - Configure reserved mapping; see *Configuring NAT reserved mapping*.
- Firewall – AB-100 allows you to:
  - Enable Firewall and Firewall Intrusion Detection settings; see *Enabling Firewall and/or Intrusion Detection*.
  - Set the Firewall security level; see *Setting a default security level*.

- Configuring Firewall policies, portfilters and validators; see *Configuring Security policies*, *Configuring portfilters*, and *Configuring validators*.
- Configure Intrusion Detection settings: see *Configuring Intrusion Detection Settings*.

From the Configuration menu, click on *Security*. The following page is displayed:



This page contains the default *Security* settings.

3.4.4.1 Enabling Security

You must enable *Security* before you can enable *Firewall and/or Intrusion Detection*. In the *Security State* section:

1. Click on *Security Enable* radio button.
2. Click on *Change State* to update the *Security State* section.

3.4.4.2 Enabling Firewall and/or Intrusion Detection

You must create a security interface before you can enable Firewall and/or Intrusion Detection. See *Configuring security interfaces*.

Once you have created a security interface:

1. Click on the *Firewall Enabled* and/or *Intrusion Detection Enabled* radio buttons.
2. Click on *Change State* to update the *Security State* section.

3.4.4.3 Setting a default security level

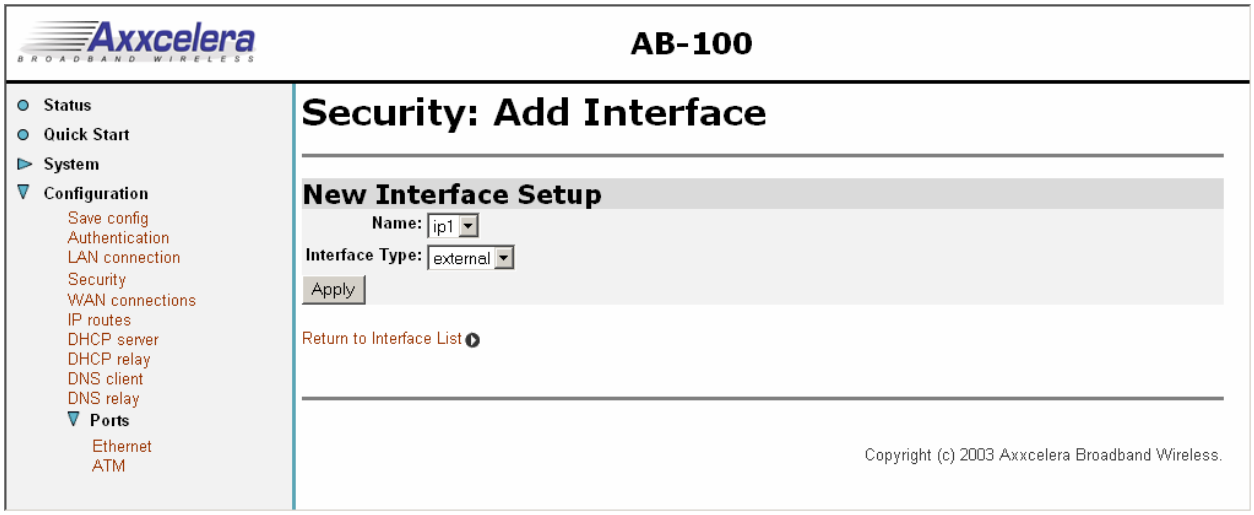
You must have *Security* and *Firewall* enabled in order to set a default Security level. See *Enabling Security* and *Enabling Firewall and/or Intrusion Detection*.

1. From the *Security Level* section, click on the *Security Level* drop-down list.
2. Click on the level that you want to set; *none*, *high*, *medium* or *low*.
3. Click on the *Change Level* button.

3.4.4.4 Configuring security interfaces

Security interfaces are based on existing LAN services. You must create a LAN service for every secutity interface that you want to configure. For details on how to create LAN services, see *LAN connections*.

1. From the *Security Interfaces* section, click on *Add Interface*. The Firewall: *Add Interface* page is displayed:



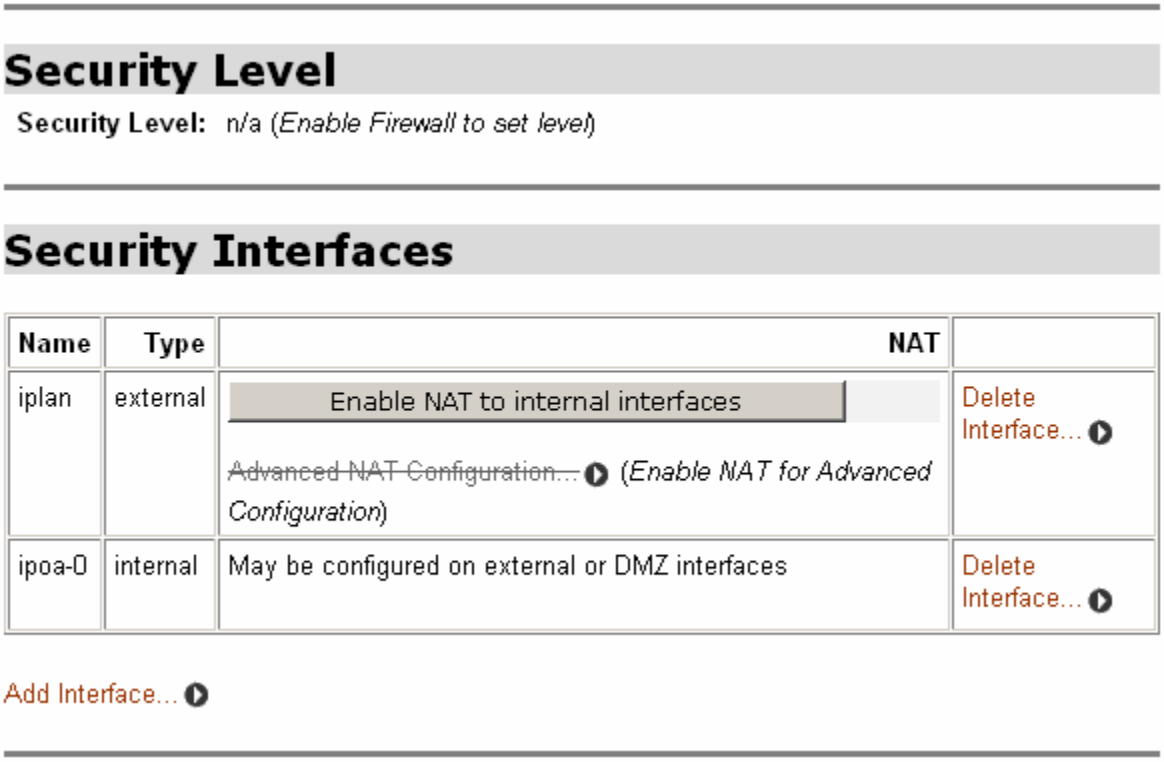
2. Click on the *Name* drop-down list and select the LAN service that you want to base your security interface on.

3. Click on the *Interface Type* drop-down list and specify what kind of interface it is depending on how it connects to the network; *external*, *internal*, or *DMZ*.
4. Click on *Apply*. The Security page is displayed. The *Security Interface* section contains a table that displays information about each security interface that you have created:
   - *Name* – name of LAN service that the security interface is based on.
   - *Type* of network connection specified.
   - *NAT* setting. It contains hyperlinks that allow you to configure NAT. See *Configuring NAT*.
   - *Delete Interface…* hyperlink. Click on this to display the *Security: Delete Interface* page. Check the interface details, then click on the *Delete* button.

3.4.4.5 Configuring NAT

To configure NAT, you need to:

1. Enable Security; see *Enabling Security*.
2. Create at least two different security interface types based on existing LAN services; see *Configuring security interfaces*.
3. Once you have created more than one security interface, the *NAT* column in the *Security Interface* table tells you that you can enable NAT between the existing security interface and a network interface type. For example, if you create an external interface and an internal interface, your table will look like this:



The NAT column for the external interface tells you that you can enable NAT to internal interfaces. If you had a DMZ interface configured, this column would also include an *Enable NAT to DMZ interfaces* button.

4. To enable NAT between the external interface and the internal interface type, click on *Enable NAT to internal interfaces*. The *Security* page is refreshed and NAT is enabled. To disable NAT between interfaces, click on *Disable NAT to internal interfaces*.

Once you have enabled NAT between interfaces, you can:

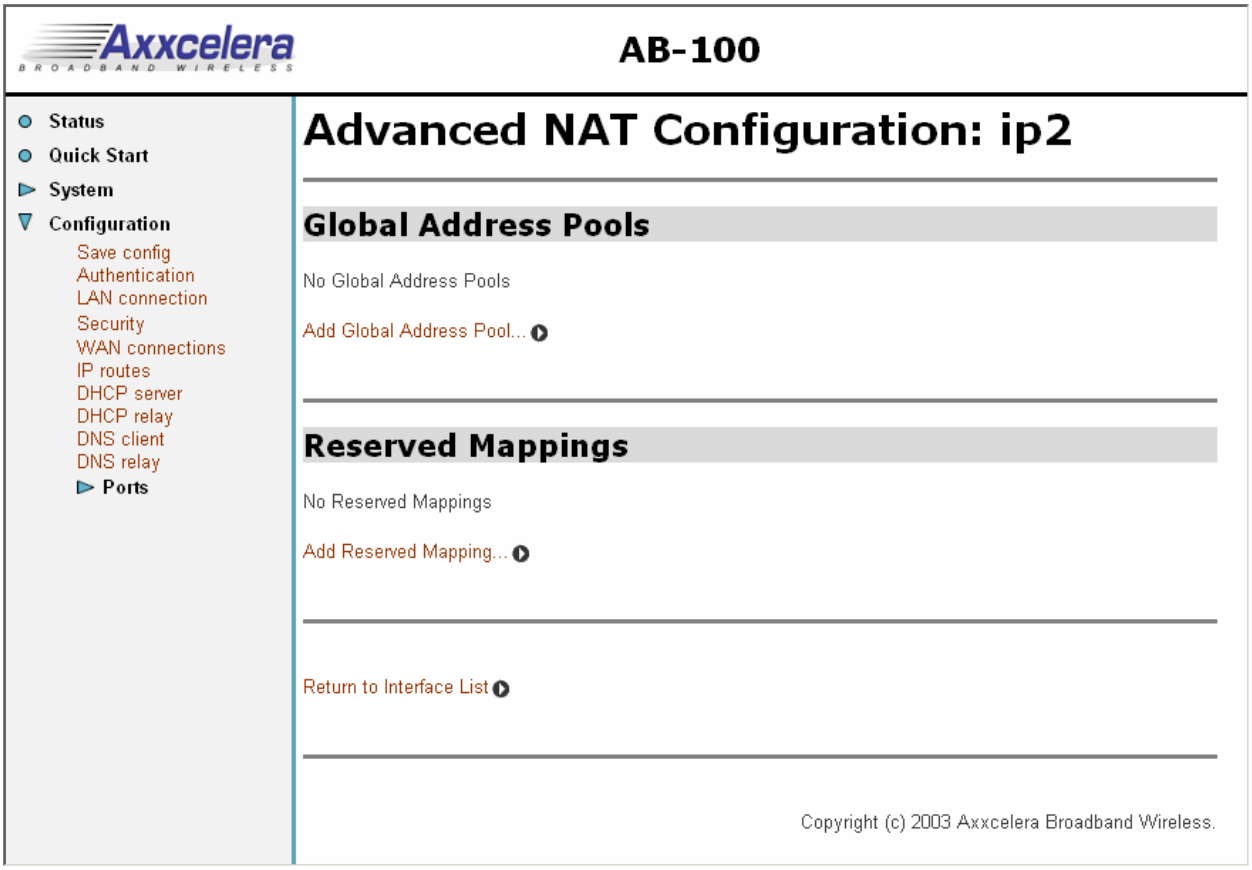
- Configure global addresses; see *Configuring NAT global addresses*.
- Configure reserved mapping; see *Configure NAT reserved mapping*.

3.4.4.6 Configuring NAT global addresses

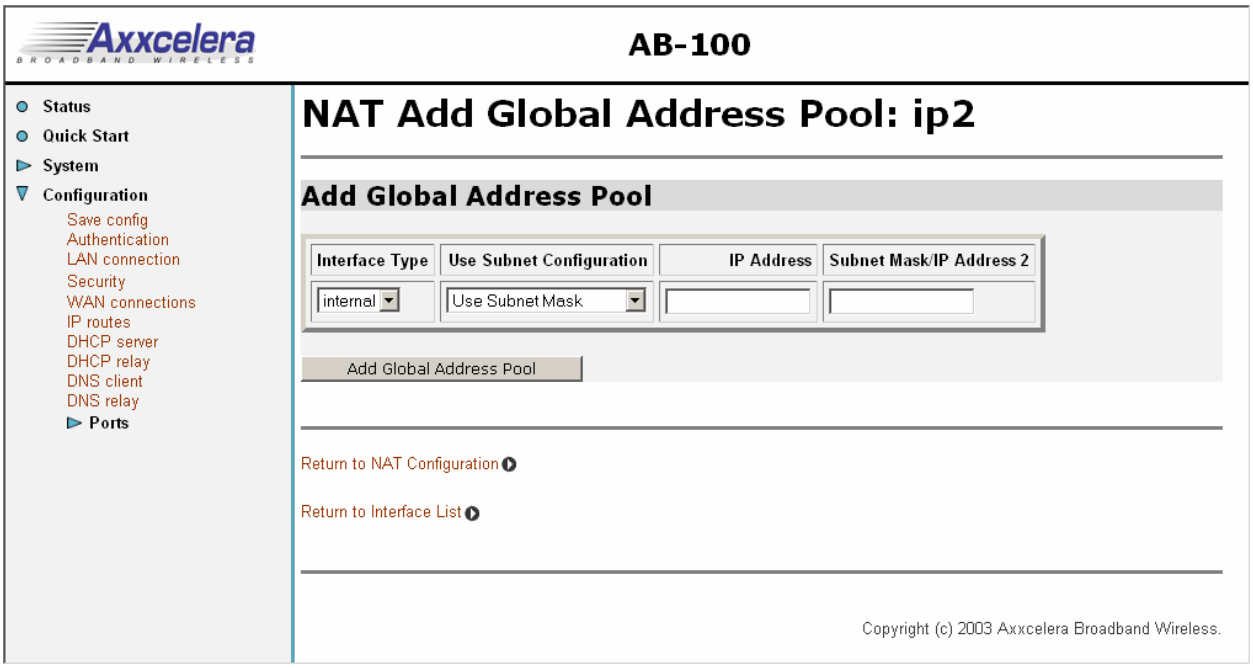
Global address pools allow you to create a pool of outside network addresses that is visible outside your network. Before you can configure global addresses, you need to configure NAT. See *Configuring NAT*.

If you want to set up a global address pool on your existing NAT enabled interfaces:

1. From the *NAT Security Interfaces* table, click on the *Advanced NAT Configuration* hyperlink for the interface that you want to add a global pool to. The following page is displayed:



2. Click on *Add Global Address Pool* the following page is displayed:



3. This page allows you to create a pool of network IP addresses that are visible outside your network. Add values for the following table entries:
   - *Interface type*; the internal address type that you want to map your external global IP addresses to. Click on the drop-down list and select an interface type.
   - *Use Subnet Configuration*; there are two ways to specify a range of IP addresses. You can either *Use Subnet Mask* (specify the subnet mask address of the IP address) or *Use IP Address Range* (specify the first and last IP address in the range). Click on the drop-down list and select a method.
   - Type in the *IP Address* that is visible outside the network.
   - *Subnet Mask/IP Address 2*; the value you specify here depends on the subnet configuration that you are using. If you chose *Use Subnet Mask*, type in the subnet mask of the IP address. If you chose *Use IP Address Range*, type in the last IP address in the range of addresses that make up the global address pool.
4. Once you have configured the table, click on *Add global address pool*. The table is refreshed and the global address is added to your NAT configuration.

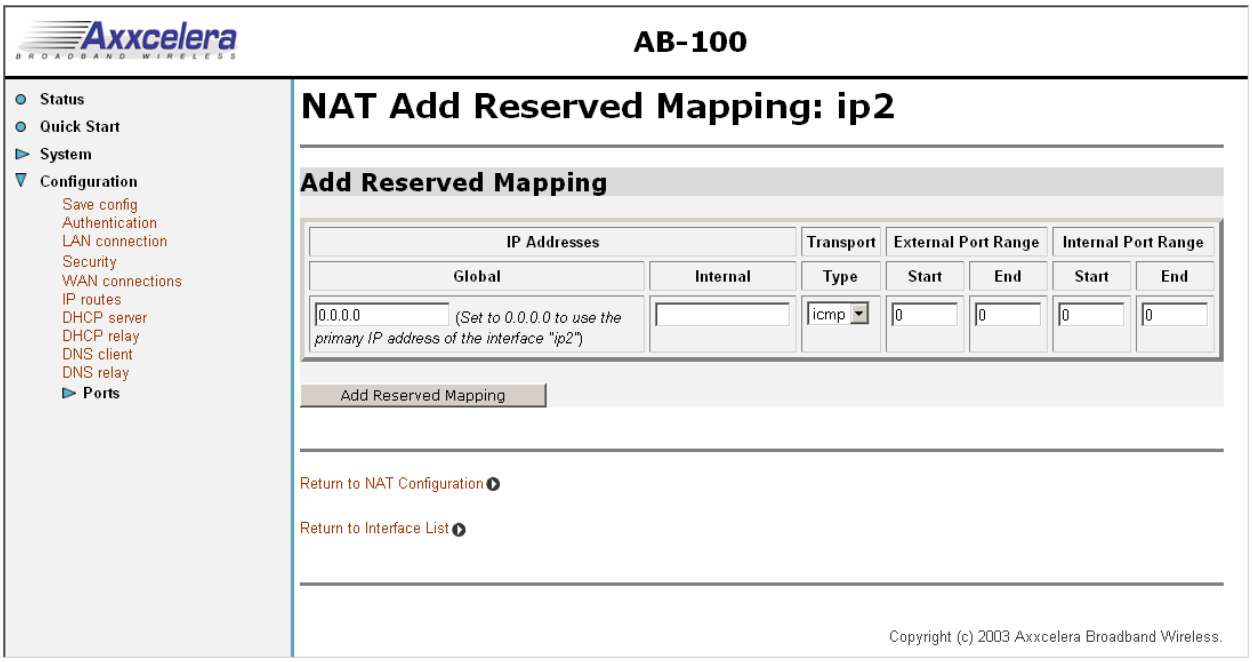
To delete a global address pool, click on the *Delete* hyperlink, then click on the *Delete Global Address Pool* button.
Click on *Return to Interface List* to display the *Security Interface Configuration* page.
To create a reserved mapping, click on the Add Reserved Mapping hyperlink. See *Configuring NAT reserved mappings*.

3.4.4.7 Configuring NAT reserved mapping

Reserved mapping allows you to map an outside security interface or an IP address from a global pool to an individual IP address inside the network. Mapping is based on transport type and port number. Before you can configure reserved mapping, you need to configure NAT. See *Configuring NAT*.

If you want to setup a reserved mapping on your existing NAT enabled interface:

1. From the *NAT Security Interfaces* table, click on the *Advanced NAT Configuration* hyperlink for the interface that you want to add reserved mapping to. The *Advanced NAT Configuration* page is displayed.
2. Click on the *Add Reserved Mapping* hyperlink. The follow page is displayed:



3. This page allows you to configure your reserved mapping. Add specific values for the following table entries:
   - *Global IP Address*; if you are mapping from a global IP address, type the address here. If you are mapping g from a security interface , type 0.0.0.0.
   - *Internal IP Address*; the IP address of an individual host inside your network.
   - *Transport Type*; specify the transport type that you want to map from the outside interface to the inside.
   - *Port Number*; the port number that your transport uses.
4. Once you have configured the table, click on *Add reserved mapping*. The table is refreshed and reserved mapping is added to your NAT configuration.

To delete a reserved mapping setup, click on the *Delete* hyperlink, then click on the *Delete Reserved Mapping button*.

Click on *Return to Interface List* to display the *Security Interface Configuration* page.

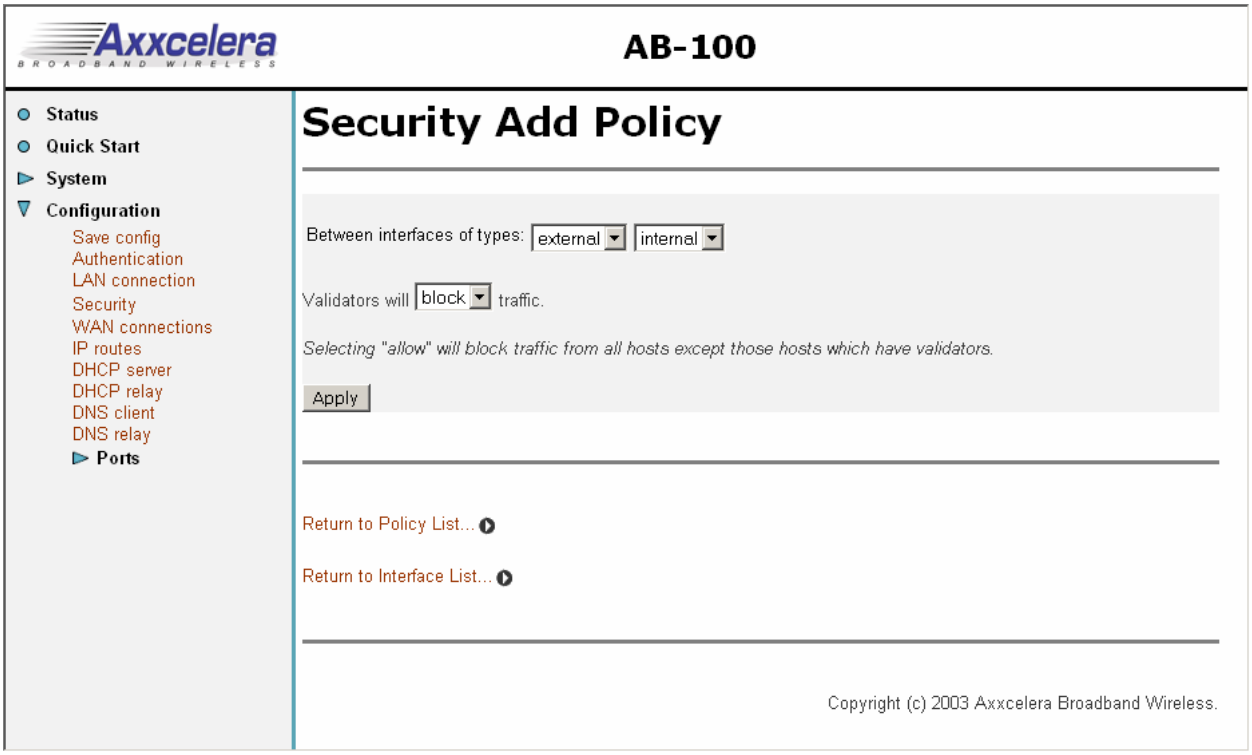
3.4.4.8 Configuring Security policies

A policy is the collective term for the rules that apply to incoming and outgoing traffic between two interface types. Before you can create a Security policy, you need to enable Security. See *Enabling Firewall and/or Intrusion Detection*.

To create and configure a Firewall policy:

1. Go to the *Policies, Triggers and Intrusion Detection* section of the *Security Interface Configuration* page. Click on *Security Policy Configuration*. The *Security Policy Configuration* page is displayed.

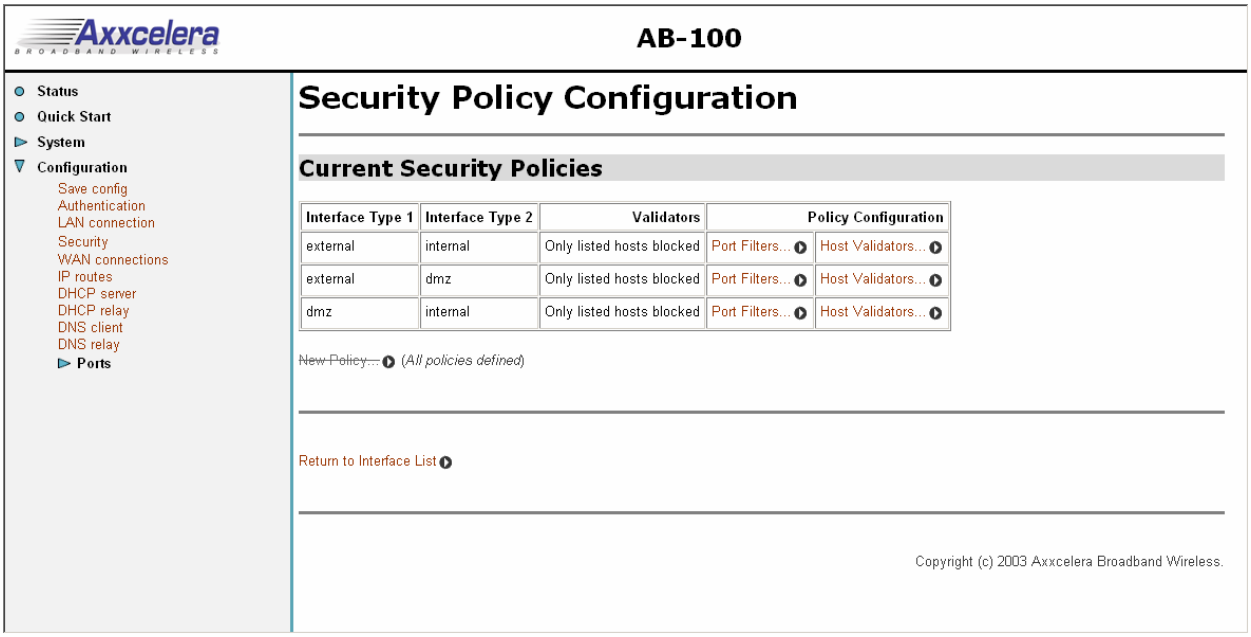
2. Click on *New Policy*. The Security *Add Policy* page is displayed:



3. This page allows you to configure your Security policy. Add specific values for the following entries.
   - Set the interface types that you want to create a policy between by selecting a type from each of the *Between interfaces of types* drop down lists.
   - Set the policy to either *block* only traffic specified in validators, or *allow* only traffic specified in validators. For more information on validators, see *Configuring validators*.

   Click on *Apply*. After a short time, the policy is added to the Firewall configuration.

4. To display policy details click on *Return to Policy List*. The page is refreshed and contains a *Current Security Policies* table:



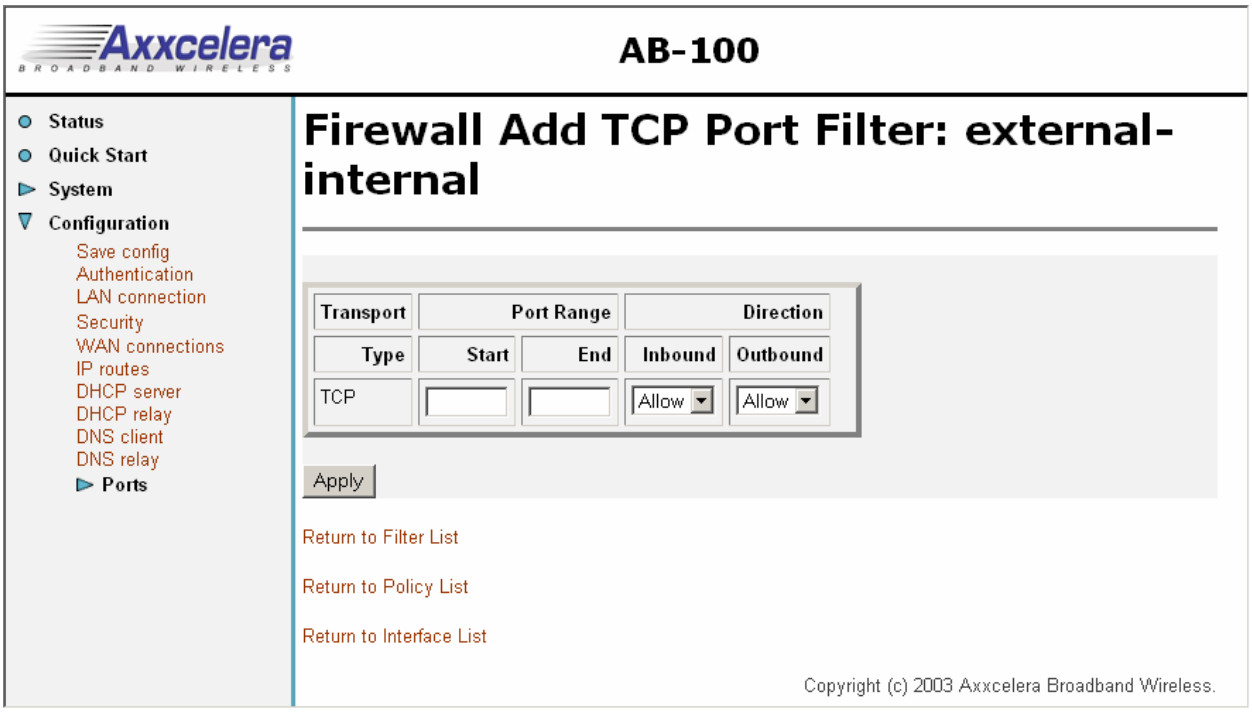
The table contains details of each Security policy. You can now configure the policies to include portfilters and validators. See *Configuring portfilters* and *Configuring validators*.

3.4.4.9 Configuring portfilters

A portfilter is an individual rule that determines what kind of traffic can pass between two interfaces specified in an existing policy. This section assumes that you will have followed the instructions in *Configuring Security Policies*.

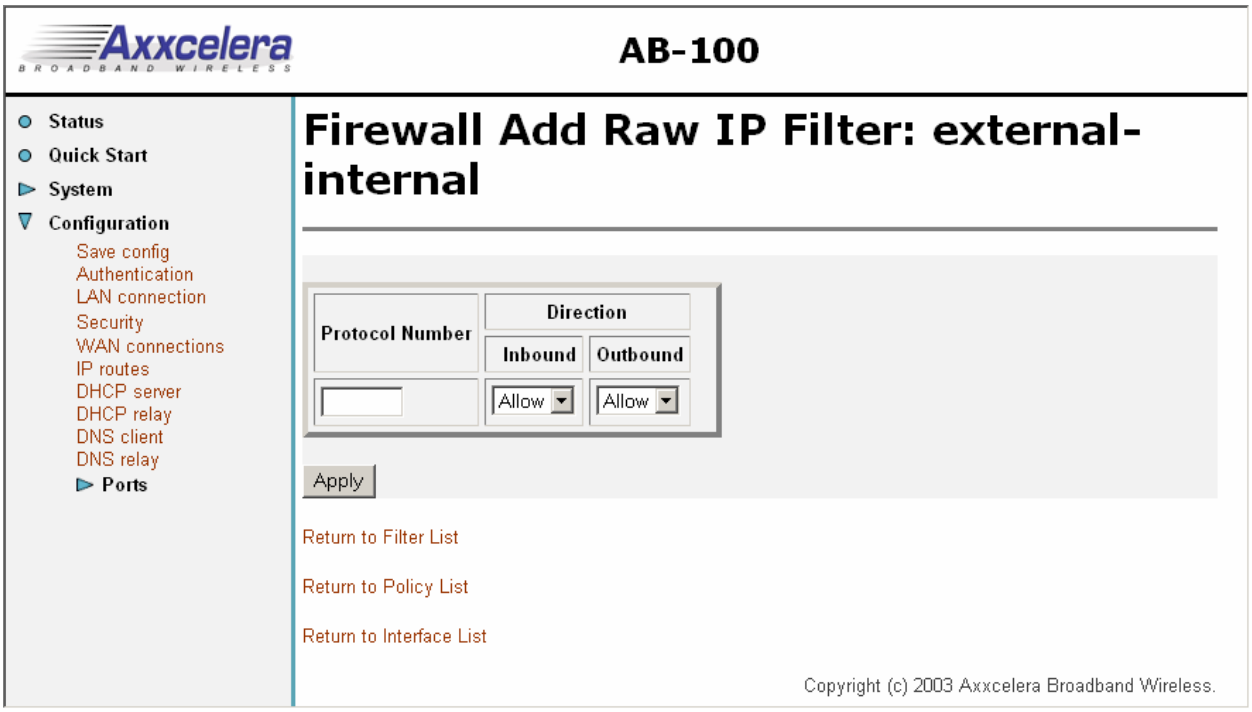
To configure portfilter:

1. From the *Current Security Policies* table, click on the *Port Filters* link for the policy that you want to configure. The page displayed contains three *Add Filter* hyperlinks that allow you to create three different kinds of portfilter:
   - For a TCP portfilter click on *Add TCP Filter*. The following page is displayed:



Specify the start and end of the port range for the TCP protocol that you want to filter. For information on application port numbers, see ftp://ftp.rfc-editor.org/in-notes/rfc1700.txt. Then use the *Direction* drop-down lists to specify whether you want to allow/block outbound traffic. Click on *Apply*. The *Firewall Port Filters* page is displayed, containing details of the TCP portfilter that you have just added.

- For a UDP portfilter click on *Add UDP Filter*. The *Firewall Add UDP Port Filter* page is displayed. For details on how to complete the table, follow the above instructions for adding a TCP portfilter.
- For a non-TCP/UDP portfilter click on *Add Raw IP Filter*. The following page is displayed:



Specify the protocol number in the *Transport Type* text box, for example, for IGMP, enter protocol number 2. For more information on protocol numbers, see ftp://ftp.rfc-editor.org/in-notes/rfc1700.txt. Then use the *Direction* drop-down lists to specify whether you want to allow/block inbound traffic, and allow/block outbound traffic. Click on *Apply*. *The Firewall Port Filters* page is displayed, containing details of the IP portfilter that you have just added.

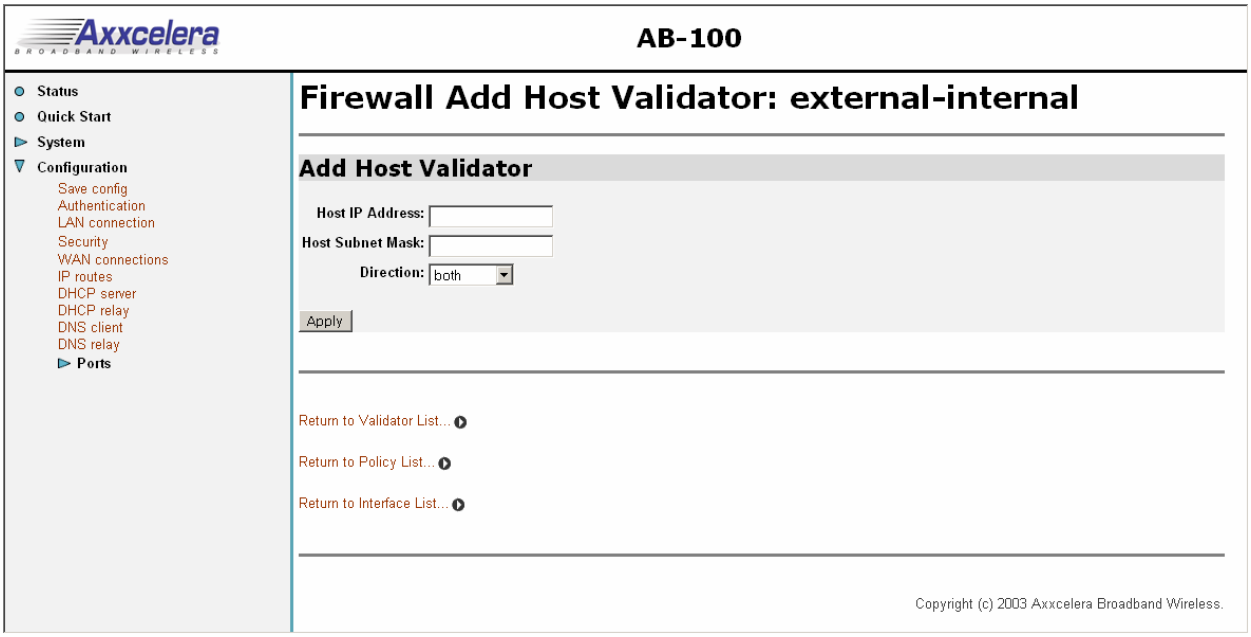
2. Each portfilter displayed in the *Firewall Port Filters* page has a *Delete* hyperlink assigned to it. To delete a portfilter, click on this link, then at the confirmation page, click on the *Delete* button. The portfilter is removed from the Firewall configuration.

3.4.4.10 Configuring validators

A validator allows/blocks traffic based on the source/destination IP address and netmask. Traffic will be allowed or blocked depending on the validator configuration specified when the policy was created. See *Configuring Security policies*. This section assumes that you have previously followed the instructions in *Configuring Security policies*.

To configure validator:

1. From the *Current Firewall Policies* table, click on *Host Validators* link for the policy that you want to configure. The *Configure Validators* page is displayed. Click on the *Add Host Validator* link. The following page is displayed:



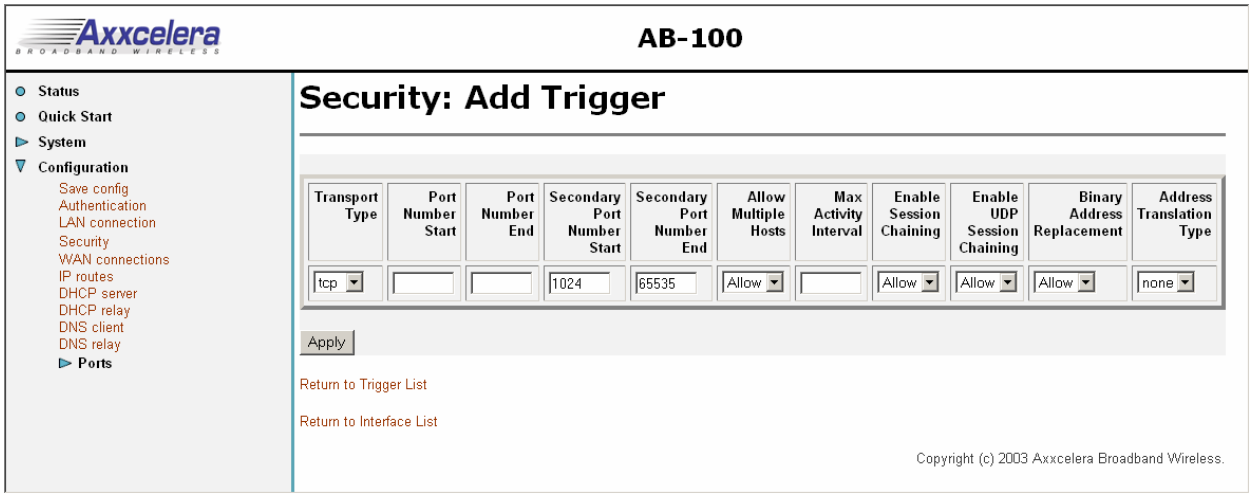
2. In the *Host IP Address* text box, type the IP address that you want to allow/block.
3. In the *Host Subnet Mask* text box, type the IP mask address. If you want to filter a range of addresses, you can specify the mask, for example, 255.255.255.0. If you want to filter a single IP address, use the specific IP mask address, for example, 255.255.255.255.
4. Click on the *Direction* drop-down list and select the direction of traffic that you want the validator to filter.
5. Click on *Apply*. The *Configure Validators* page is displayed containing details of the host validator that you have just added.
6. Each portfilter displayed in the *Configuration Validators* page has a *Delete Host Validator* hyperlink assigned to it. To delete a validator, click on this link, then at the confirmation page, click on the *Delete Host Validator* button. The validator is removed from the Firewall configuration.

3.4.4.11 Configuring triggers

A trigger allows an application to open a secondary port in order to transport packets. The most common applications that require secondary ports are FTP and NetMeeting. This section assumes that you have followed the instructions in *Enabling Security*.

To configure a trigger:

1. Go to *Policies, Triggers and Intrusion Detection* section on the *Security Interface Configuration*. Click *on Firewall Trigger Configuration*. The Firewall Configuration pages is displayed. There are no triggers defined at this time. Click on the *New Trigger* link. The following page is displayed:



2. Configure the trigger as follows:

    a. *Transport Type*; select a transport from the drop-down list, depending on whether you are adding a trigger for a TCP or a UDP application.
    b. *Port Number Start*; type the start of the trigger port range that the primary session uses.
    c. *Port Number End*; type the end of the trigger port range that the primary session uses.
    d. *Secondary Port Number Start*; type the start of the trigger port range that the secondary session uses.
    e. *Secondary Port Number End*; type the start of the trigger port range that the secondary session uses.
    f. *Allow Multiple Hosts*; select *allow* if you want a secondary session to be initiated to/from different remote hosts. Select *block* if you want a secondary session to be initiated only to/from the same remote host.
    g. *Max Activity Interval*; type the maximum interval time (in milliseconds) between the use of secondary port sessions.
    h. *Enable Session Chaining*; select *Allow* or *Block* depending on whether you want to allow multi-level TCP session chaining.
    i. *Enable UDP Session Chaining*; select *Allow* or *Block* depending on whether you want to allow multi-level UDP and TCP session chaining. You must set *Enable Session Chaining* to *Allow* if you want this to work.
    j. *Binary Address Replacement*; select *Allow* or *Block* depending on whether you want to use binary address replacement on an existing trigger.
    k. *Address Translation Type*; specify what type of address replacement is set on a trigger. You must set *Binary Address Replacement* to *Allow* if you want this to work.
3. Once you have configured the trigger, click on *Apply*. The *Firewall Trigger Configuration* page is displayed, containing details of the trigger that you have just configured.
4. Each trigger displayed on the *Firewall Trigger Configuration* page has a *Delete* hyperlink assigned to it. To delete a trigger, click on this link, then at the confirmation page, click

on the *Delete* button. The *Firewall Trigger Configuration* page is displayed and details of the delete trigger have been removed. There are two hyperlinks on the page:

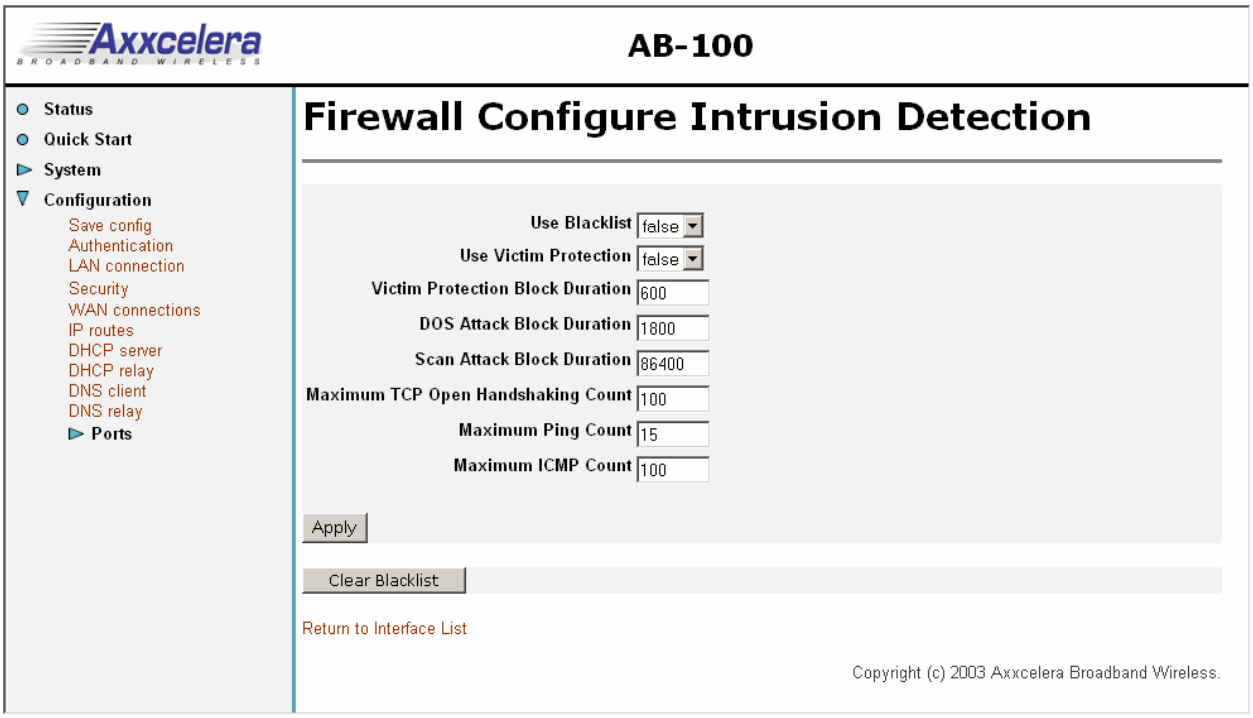
a. To add a new trigger, click on *New Trigger*.
b. To display the *Security Interface Configuration* page, click on *Return to Interface List*.

3.4.4.12 Configuring Intrusion Detection Settings

Intrusion Detection settings allow you to protect your network from intrusions such as denial of service (DOS) attacks, port scanning and web spoofing. This section assumes that you have followed the instructions in *Enabling Security* and *Enabling Firewall and/or Intrusion Detection*.

To configure Intrusion Detection settings:

1. Go to the *Policies, Triggers and Intrusion Detection* section of the *Security Interface Configuration* page. Click on *Configure Intrusion Detection*. The *Firewall Configure Intrusion Detection* page is displayed:



The values displayed above are the default values.

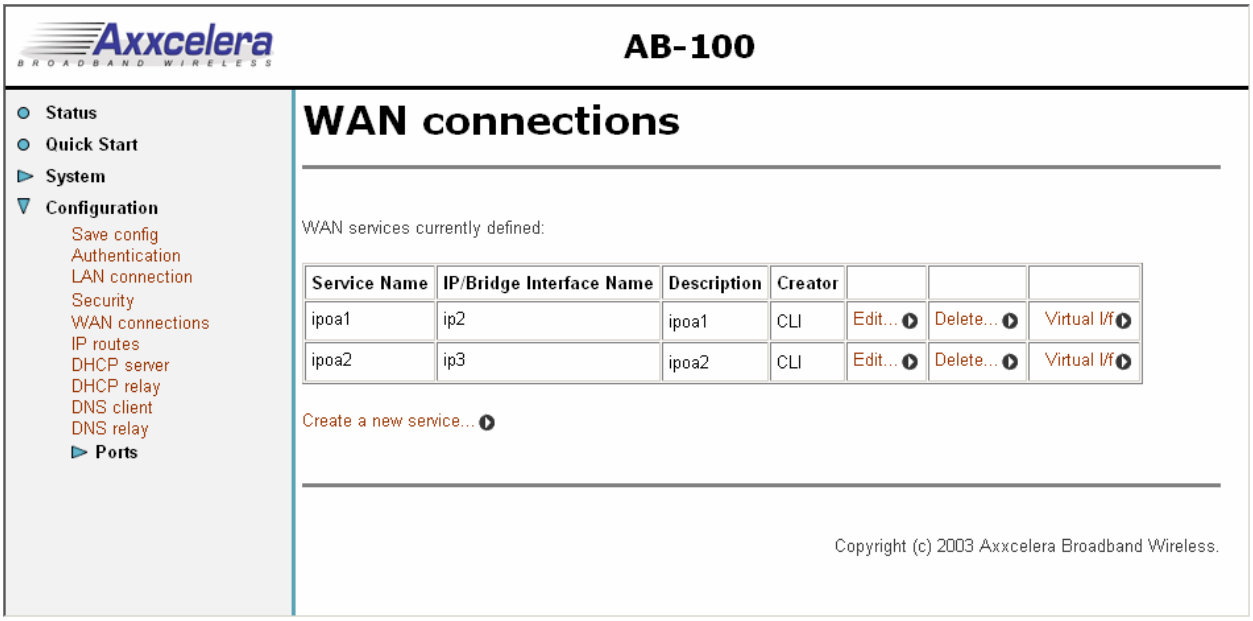
2. Configure Intrusion Detection as follows:
   a. *Use Blacklist*; select *true* or *false* depending on whether you want external hosts to be blacklisted if the Firewall detects an intrusion from that host. Click on the *Clear Blacklist* button at the bottom of the page to clear blacklisting of an external host. The *Security Interface Configuration* page is displayed.
   b. *Use Victim Protection*; select *true* of *false* depending on whether you want to protect a victim from an attempted web spoofing attack.

c. *Victim Protection Block Duration*; type the length of time (in seconds) that the Firewall blocks packets destined for the victim of a spoofing style attack.
d. *DOS Attack Block Duration*; type the length of time (in seconds) that the Firewall blocks suspicious hosts for after it has detected scan activity.
e. *Scan Attack Block Duration*; type the length of time (in seconds) that the Firewall blocks suspicious hosts for after it has detected scan activity.
f. *Maximum TCP Open Handshaking Count*; type in the maximum number of unfinished TCP handshaking sessions (per second) that are allowed by Firewall before SYN Flood is detected.
g. *Maximum Ping Count*; type in the maximum number of pings (per second) that are allowed before the Firewall detects an Echo Storm DOS attack.
h. *Maximum ICMP Count*; type in the maximum number of ICMP packets (per second) that are allowed by the Firewall before an ICMP Flood DOS is detected.

3. Once you have configured Intrusion Detection, click on *Apply*. The Intrusion Detection settings are applied to the Firewall, and the *Security Interface Configuration* page is displayed.

3.4.5 WAN connections

This option allows you to create and configure WAN connections for your AB-100. You can also create virtual interfaces on routed services. From the *Configuration* menu, click on *WAN connections*. The WAN connections page is displayed:



3.4.5.1 Creating a WAN service

1. Click on *Create a new service*. A page is displayed containing a list of WAN service options.

2. Select an option, then click on *Configure*. You need to add detailed configuration information about the WAN service that you are creating.
3. Click on *Apply*. The *WAN connections* page is displayed. The table now contains details of the service that you have just created.

3.4.5.2 Editing a WAN service

1. Click on the *Edit* link for a specific service. The *WAN connections: edit* page is displayed.
2. Change the values for the existing service. If you want to carry out advanced editing, click on the links at the top of the edit page. The links that appear depend on the type of service that you are configuring.
3. Click on *Change*. The edit page is displayed and changes are applied to the service.

3.4.5.3 Deleting a WAN service

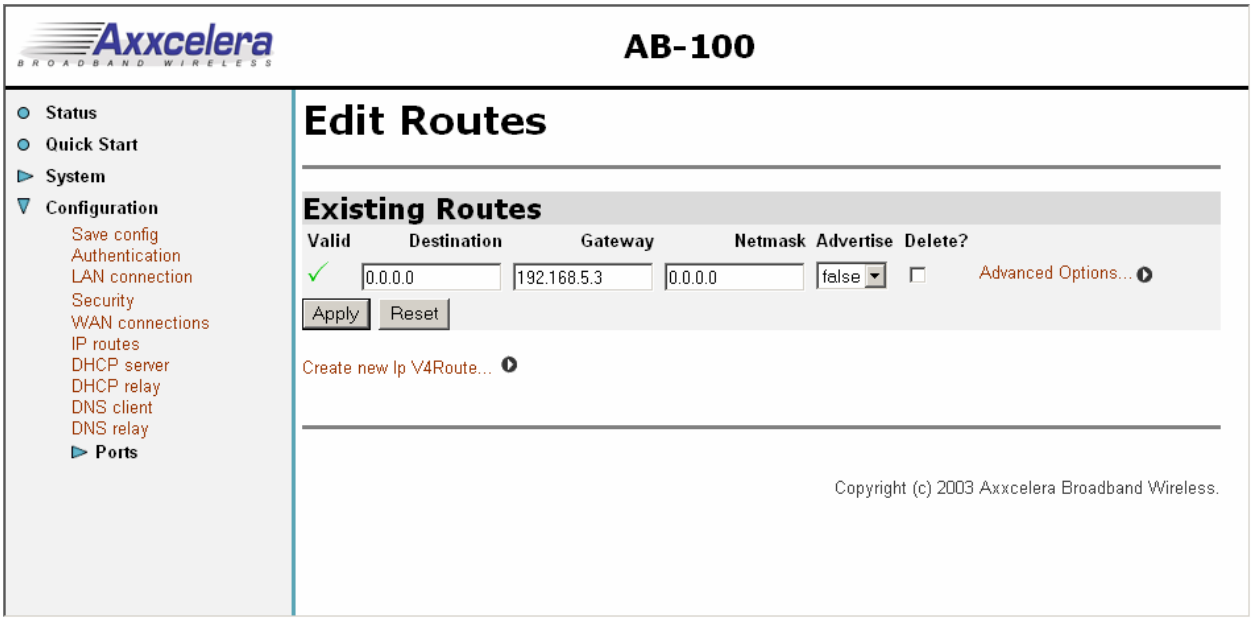
1. At the *WAN connections* page, click on the *Delete* link for a specific service. The *WAN connection: delete* page is displayed.
2. Check the details displayed, then click on the *Delete this connection* button.

3.4.5.4 Creating a virtual interface (routed services only)

1. Click on the *Virtual I/f* link for a specific service. The Virtual interface page is displayed.
2. Click on the *Create a new virtual interface…* hyperlink. On the *Create virtual interface* page, type the IP address and netmask of the virtual interface, then click on the *Apply* button.
3. The WAN connections page is displayed. If you click on the *Virtual I/f* link, the *Virtual interface* page displays a table listing the names of existing virtual interfaces. Each virtual interface is called *item#* by default.

3.4.6 IP routes

This option allows you to create static IP routes to destination addresses via an IP interface name or a Gateway address. From the *Configuration* menu, click on *IP routes*. The *Edit Routes* page is displayed:

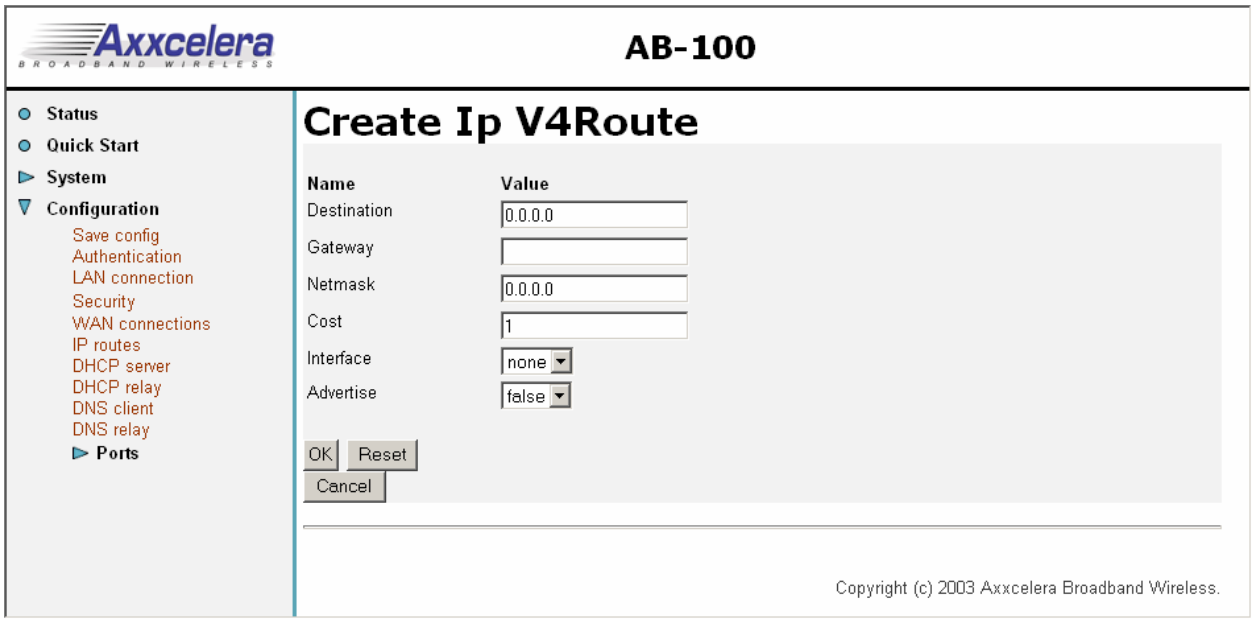


This page lists the following information about the existing routes:

- Whether the route is valid ✓ or invalid ✗
- Destination IP address
- Gateway address
- Netmask
- Whether the route is advertised via RIP (true or false)

3.4.6.1 Creating an IP V4 Route

1. Click on *Create new IP V4 Route* hyperlink. The following page is displayed:



2. Complete the Create Ip V4Route form in order to configure the route.
3. When you have filled in the details, click on *OK*. The *Edit Routes* page is displayed. The table now contains details of the route that you have just created.

3.4.6.2 Editing a route

1. To edit the destination, gateway and netmask address or a route, click in the relevant text box, update the information then click on *Apply*.
2. To edit the cost, interface setting or advertise status for the route, click on the *Advanced Options* hyperlink for a specific route and update the relevant information. Click on *OK*.

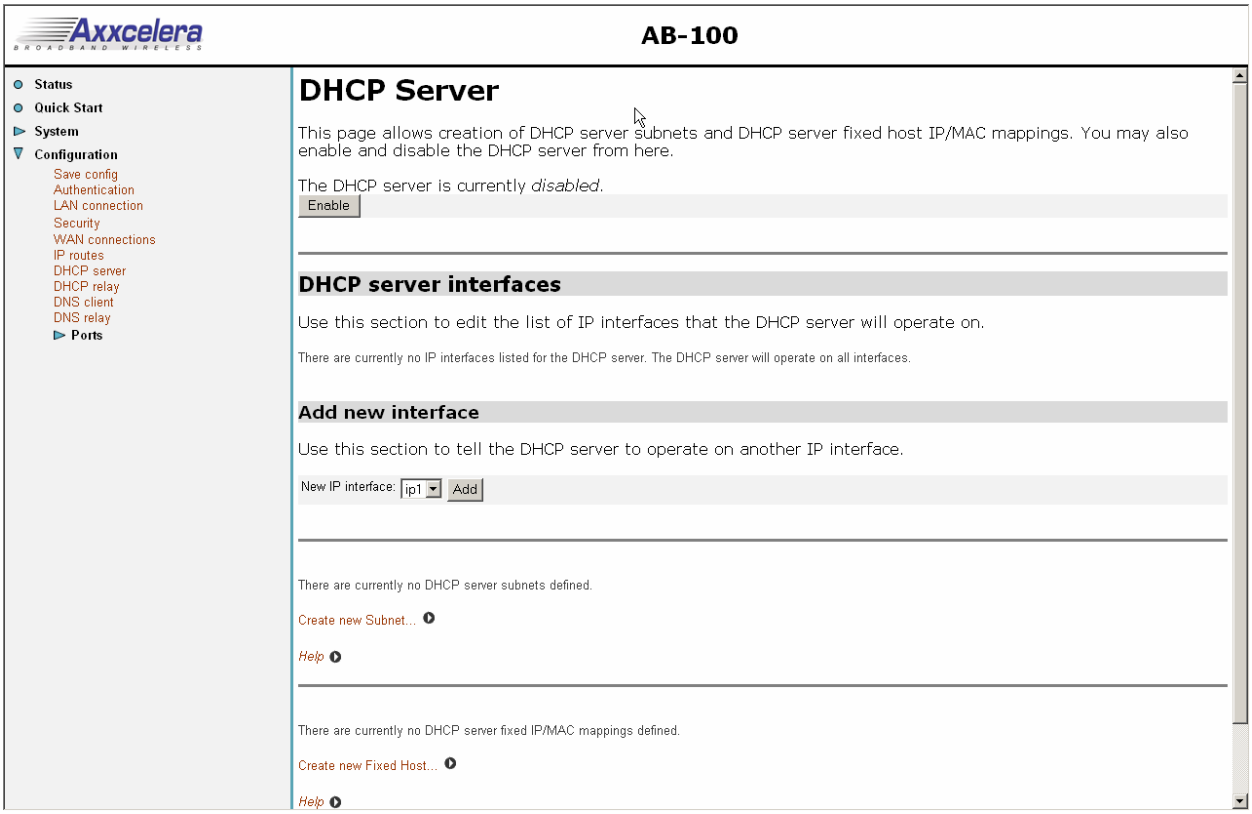
3.4.6.3 Deleting a route

1. To delete an exiting route, check the *Delete?* Box for a specific route.
2. Click on *Apply*.

3.4.7 DHCP server

This option allows you to enable/disable the DHCP server and create, configure and delete DHCP server subnets and DHCP fixed IP/MAC mappings.

From the *Configuration* menu, click on *DHCP server*. The following page is displayed:


AB-100
Status
Quick Start
System
Configuration
Save config
Authentication
LAN connection
Security
WAN connections
IP routes
DHCP server
DHCP relay
DNS client
DNS relay
Ports
DHCP Server
This page allows creation of DHCP server subnets and DHCP server fixed host IP/MAC mappings. You may also enable and disable the DHCP server from here.
The DHCP server is currently disabled.
Enable
DHCP server interfaces
Use this section to edit the list of IP interfaces that the DHCP server will operate on.
There are currently no IP interfaces listed for the DHCP server. The DHCP server will operate on all interfaces.
Add new interface
Use this section to tell the DHCP server to operate on another IP interface.
New IP interface: ip1 Add
There are currently no DHCP server subnets defined.
Create new Subnet...
Help
There are currently no DHCP server fixed IP/MAC mappings defined.
Create new Fixed Host...
Help

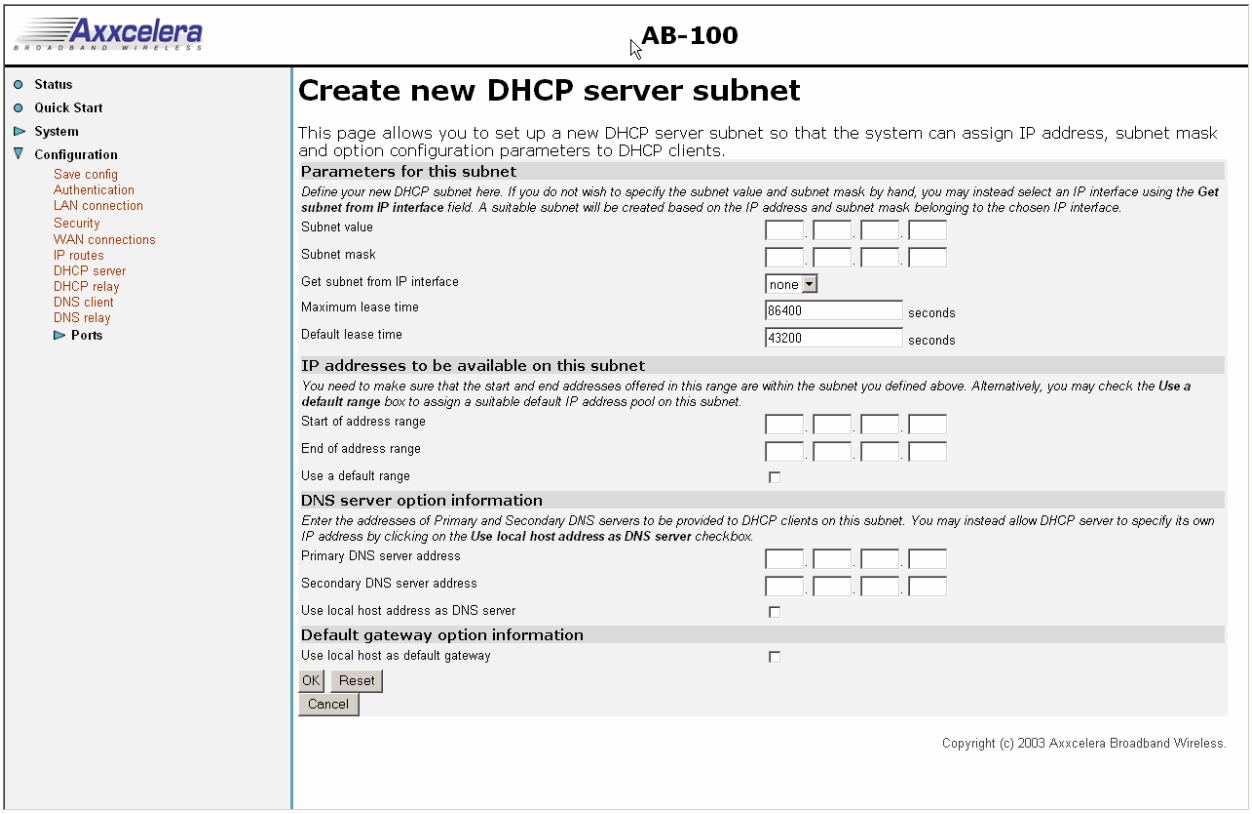
3.4.7.1 Enabling/disabling the DHCP server

1. Click on the *Enable/Disable* button at the top of the page.
2. The DHCP server is enabled by default. If you click on the *Disable* button, DHCP server is disabled and the button changes to *Enable*.

NOTE: If DHCP is enabled, DHCP server will be disabled by default. You can not enable DHCP server unless you disable DHCP relay. See *DHCP Relay*.

3.4.7.2 Creating a DHCP server subnet

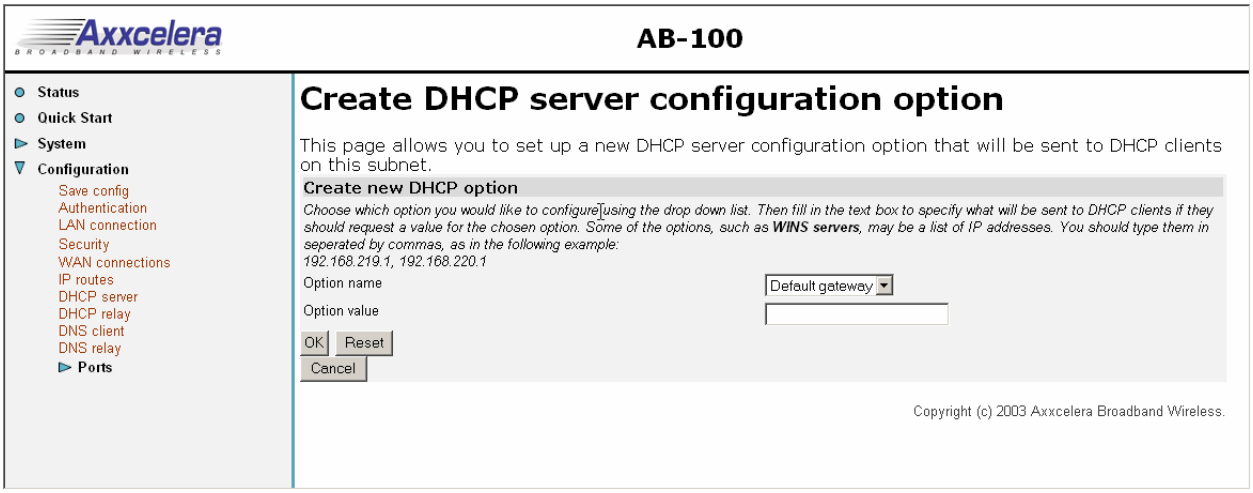
1. Click on the *Create new Subnet* link. The following page is displayed:


AB-100
Status
Quick Start
System
Configuration
Save config
Authentication
LAN connection
Security
WAN connections
IP routes
DHCP server
DHCP relay
DNS client
DNS relay
Ports
Create new DHCP server subnet
This page allows you to set up a new DHCP server subnet so that the system can assign IP address, subnet mask and option configuration parameters to DHCP clients.
Parameters for this subnet
Define your new DHCP subnet here. If you do not wish to specify the subnet value and subnet mask by hand, you may instead select an IP interface using the Get subnet from IP interface field. A suitable subnet will be created based on the IP address and subnet mask belonging to the chosen IP interface.
Subnet value
Subnet mask
Get subnet from IP interface
none
Maximum lease time
86400
seconds
Default lease time
43200
seconds
IP addresses to be available on this subnet
You need to make sure that the start and end addresses offered in this range are within the subnet you defined above. Alternatively, you may check the Use a default range box to assign a suitable default IP address pool on this subnet.
Start of address range
End of address range
Use a default range
DNS server option information
Enter the addresses of Primary and Secondary DNS servers to be provided to DHCP clients on this subnet. You may instead allow DHCP server to specify its own IP address by clicking on the Use local host address as DNS server checkbox.
Primary DNS server address
Secondary DNS server address
Use local host address as DNS server
Default gateway option information
Use local host as default gateway
OK
Reset
Cancel
Copyright (c) 2003 Axxcelera Broadband Wireless.

2. This page allows you to:
    a. Set the value and netmask of the subnet (either manually or by selecting an IP interface whose value and mask is used instead), and set the maximum and default lease times.
    b. Set the DHCP address range (or use a default range of 20 addresses).
    c. Set the Primary and Secondary DNS Server addresses or set your AB-100 System to give out its own IP address as the DNS Server address.
    d. Set your AB-100 System to give out its own IP address as the default Gateway address.
3. Once you have entered new configuration details for your *DHCP server*, click on *OK*. The DHCP Server page is displayed, containing details of your new subnet.

3.4.7.3 Editing a DHCP subnet

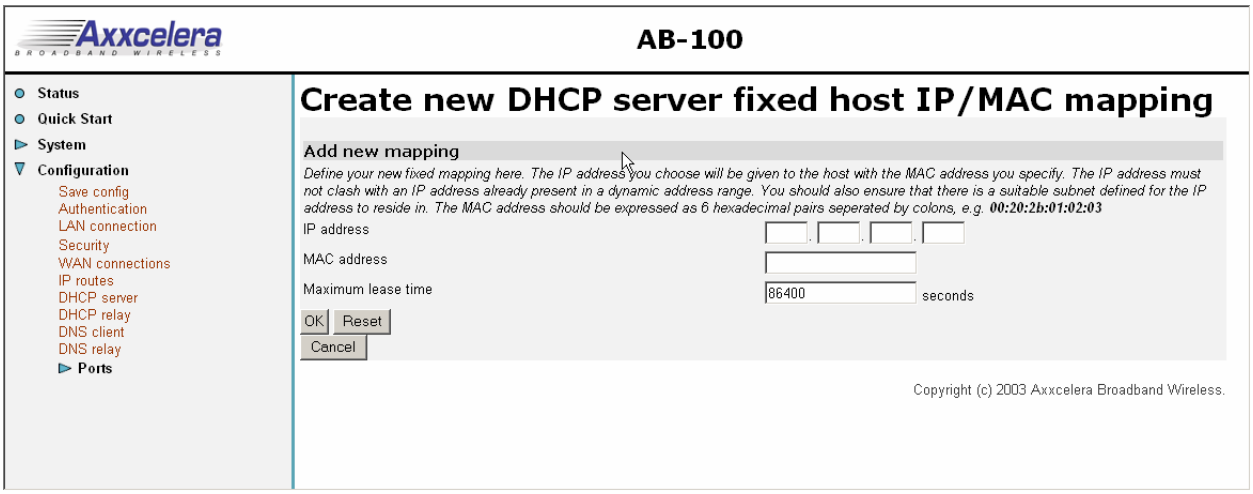
1. Click on the *Advanced Options* link for a specific subnet. The *Edit DHCP server subnet* page is displayed. This allows you to edit all of the values that were set when the subnet was created.
2. This page also allows you to add additional option information. At the bottom of the page, click on the *Create new DHCP option* link. The following page is displayed:


Axxcelera
BROADBAND WIRELESS
AB-100
Status
Quick Start
System
Configuration
Save config
Authentication
LAN connection
Security
WAN connections
IP routes
DHCP server
DHCP relay
DNS client
DNS relay
Ports
Create DHCP server configuration option
This page allows you to set up a new DHCP server configuration option that will be sent to DHCP clients on this subnet.
Create new DHCP option
Choose which option you would like to configure using the drop down list. Then fill in the text box to specify what will be sent to DHCP clients if they should request a value for the chosen option. Some of the options, such as WINS servers, may be a list of IP addresses. You should type them in seperated by commas, as in the following example:
192.168.219.1, 192.168.220.1
Option name
Default gateway
Option value
OK
Reset
Cancel
Copyright (c) 2003 Axxcelera Broadband Wireless.

3. Click on the *Option name* drop-down list and select a name. Type a value that matches the selected option name in the *Option value* text box. Click on *OK*.
4. The *Edit DHCP server subnet* page is displayed, and details of your new option are displayed under the sub-heading *Additional option information*. To delete an existing option, check the *Delete?* box for a specific option and click *OK*.

3.4.7.4 Creating a fixed host

1. Click on the *Create new Fixed Host* link. The following page is displayed:


Axxcelera
BROADBAND WIRELESS
AB-100
Status
Quick Start
System
Configuration
Save config
Authentication
LAN connection
Security
WAN connections
IP routes
DHCP server
DHCP relay
DNS client
DNS relay
Ports
Create new DHCP server fixed host IP/MAC mapping
Add new mapping
Define your new fixed mapping here. The IP address you choose will be given to the host with the MAC address you specify. The IP address must not clash with an IP address already present in a dynamic address range. You should also ensure that there is a suitable subnet defined for the IP address to reside in. The MAC address should be expressed as 6 hexadecimal pairs seperated by colons, e.g. 00:20:2b:01:02:03
IP address
MAC address
Maximum lease time
86400
seconds
OK
Reset
Cancel
Copyright (c) 2003 Axxcelera Broadband Wireless.

2. Complete the following:
    a. Type in the IP address that will be given to the host with the specific MAC address.
    b. Type in the MAC address and the maximum lease time (default is 86400 seconds).
3. Click on *OK*. The *DHCP Server* page is displayed, and details of your new fixed host are displayed under the sub-heading *Existing DHCP fixed IP/MAC mappings*. To edit a fixed mapping, click on the IP address, MAC address or max lease time, type a new entry and

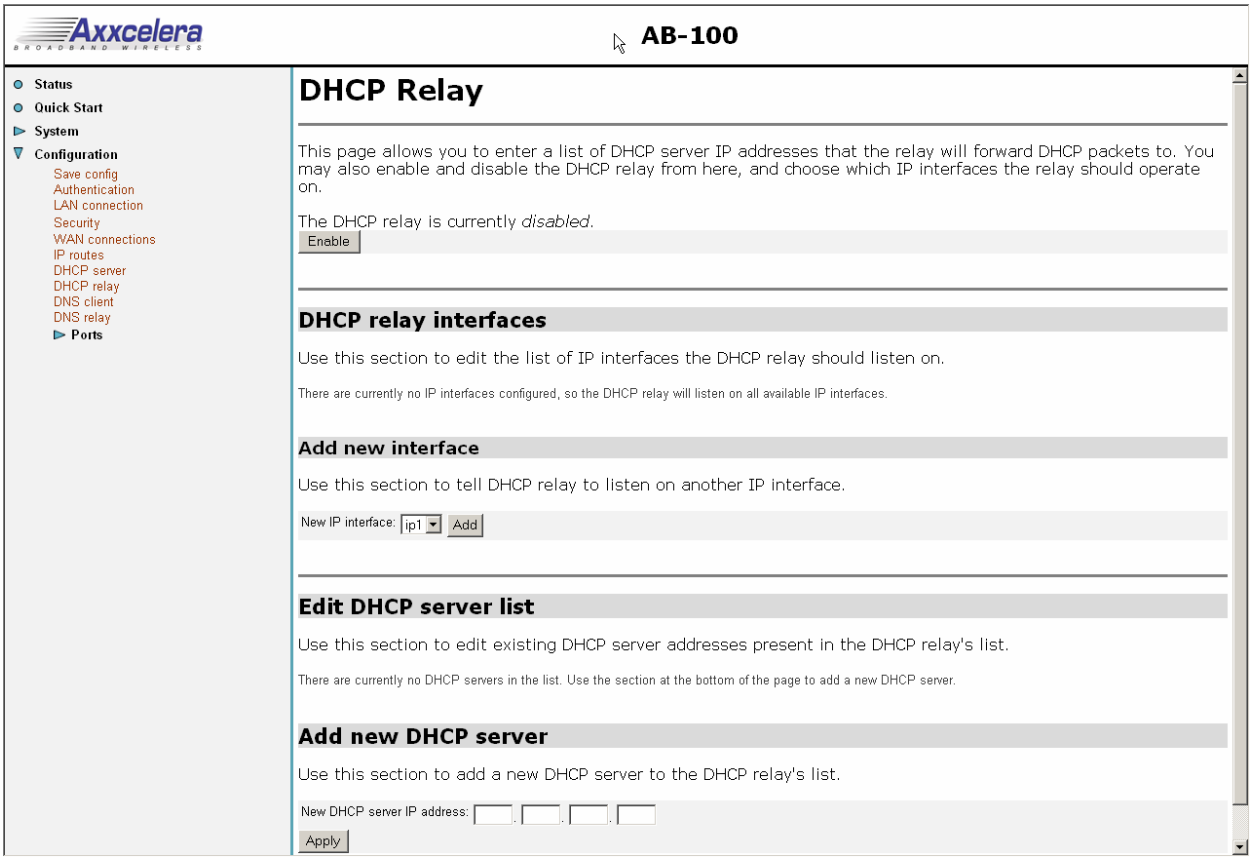
click *Apply*. To delete a fixed mapping, check the *Delete?* box for specific mapping and click *Apply*.

3.4.8 DHCP relay

This option allows you to:

- Enable/disable DHCP relay.
- Add DHCP servers to the DHCP relay list.
- Configure/delete server entries on the DHCP relay list.

From the *Configuration menu*, click on *DHCP relay*. The following page is displayed:


Axxcelera
BROADBAND WIRELESS
AB-100
Status
Quick Start
System
Configuration
Save config
Authentication
LAN connection
Security
WAN connections
IP routes
DHCP server
DHCP relay
DNS client
DNS relay
Ports
DHCP Relay
This page allows you to enter a list of DHCP server IP addresses that the relay will forward DHCP packets to. You may also enable and disable the DHCP relay from here, and choose which IP interfaces the relay should operate on.
The DHCP relay is currently disabled.
Enable
DHCP relay interfaces
Use this section to edit the list of IP interfaces the DHCP relay should listen on.
There are currently no IP interfaces configured, so the DHCP relay will listen on all available IP interfaces.
Add new interface
Use this section to tell DHCP relay to listen on another IP interface.
New IP interface: ip1 Add
Edit DHCP server list
Use this section to edit existing DHCP server addresses present in the DHCP relay's list.
There are currently no DHCP servers in the list. Use the section at the bottom of the page to add a new DHCP server.
Add new DHCP server
Use this section to add a new DHCP server to the DHCP relay's list.
New DHCP server IP address:
Apply

3.4.8.1 Enabling/disabling DHCP relay

1. Click on the *Enable/Disable* button at the top of the page. If you click on the *Disable* button, DHCP server is disabled and the button changes to *Enable*.
   NOTE: If DHCP server is enabled, DHCP relay will be disabled by default. You can not enable DHCP relays unless you disable DHCP server. See *DHCP Server*.

3.4.8.2 Adding a DHCP server to the DHCP relay list

1. In the *Add new DHCP server* section, type an address in the *New DHCP server IP address* text box.
2. Click on *Apply*. The address is displayed in the *Edit DHCP server list* section.

3.4.8.3 Editing/deleting entries in the DHCP relay list

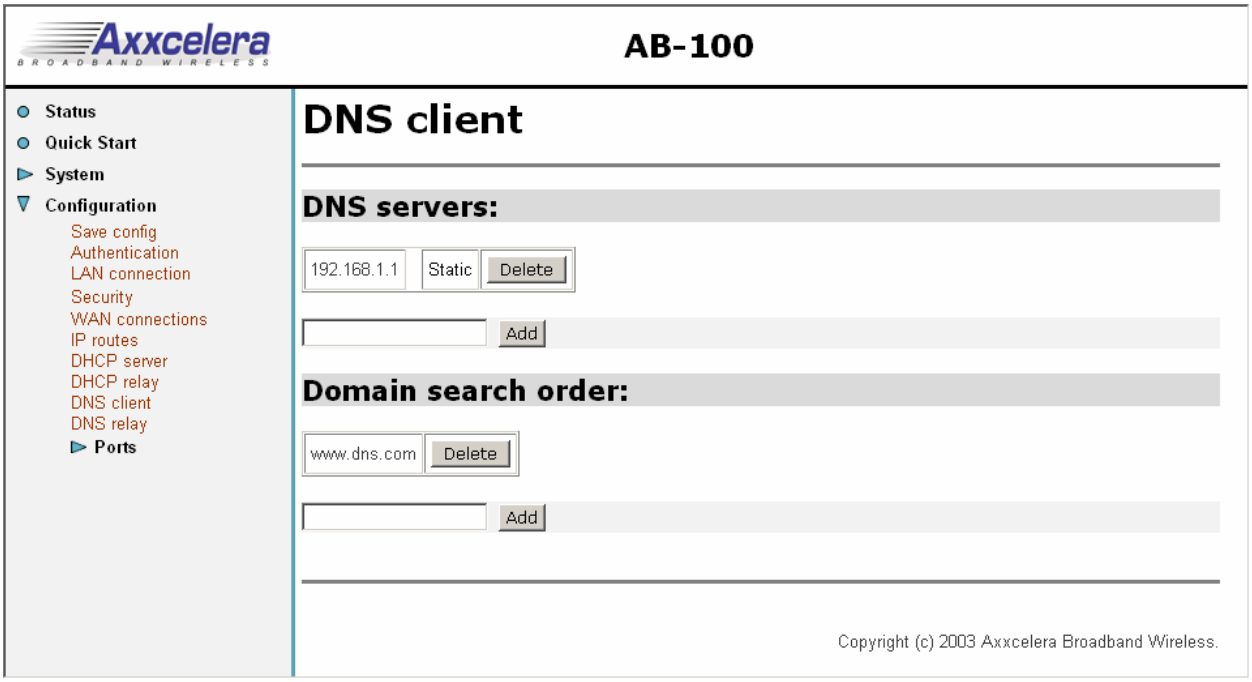
1. To edit an entry, click on an IP address and type a new entry, then click on *Apply*.
2. To delete an entry, check the *Delete?* box for a specific IP address, the click on *Apply*.

3.4.9 DNS client

This option allows you to:

- Create a list of server addresses. This enables you to retrieve a domain name for a given IP address.
- Create domain search list. DNS client uses this list when a user asks for the IP address list for an incomplete domain name.

From the *Configuration* menu, click on *DNS client*. The following page is displayed:



3.4.9.1 Configuring DNS servers

1. Type the IP address of the unknown domain name in the *DNS servers:* text box.

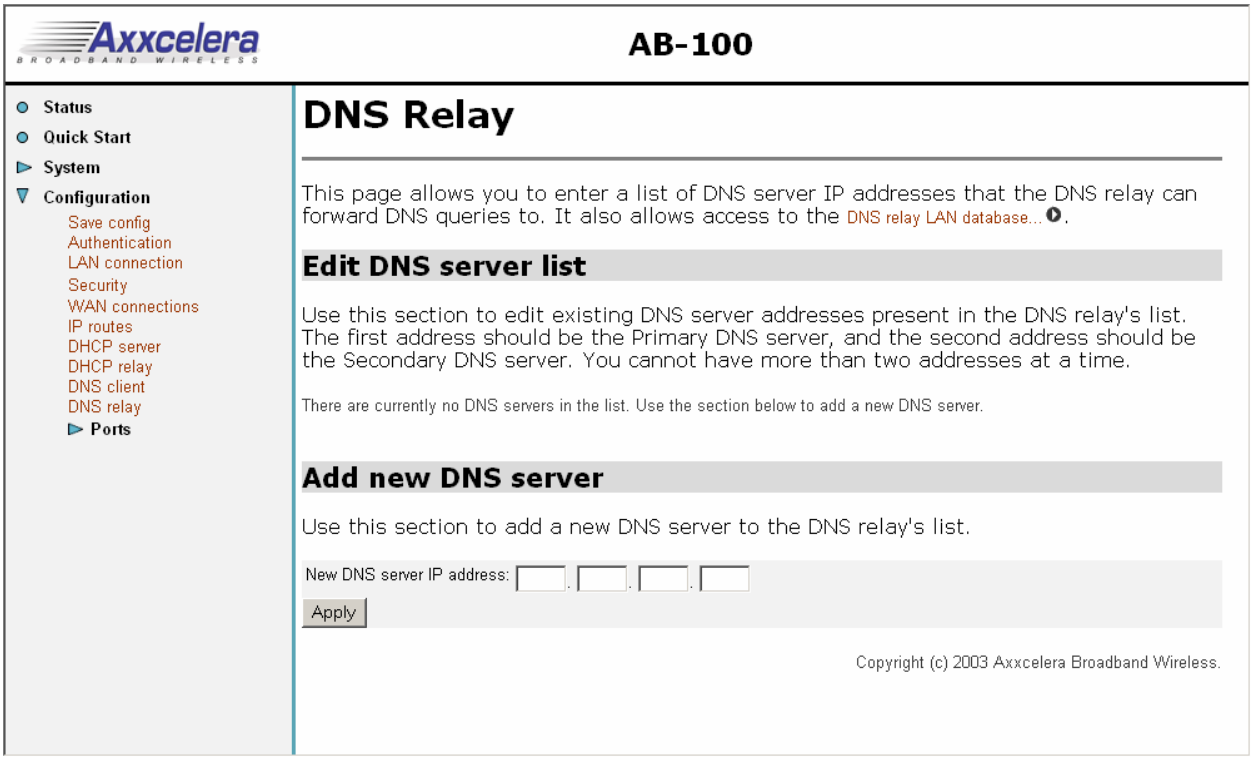
2. Click *Add*. The IP address appears in the DNS server table. You can add a maximum of three server IP addresses. Each IP address entry has a *Delete* button associated with it. Click on *Delete* to remove an IP address from this list.

3.4.9.2 Configuring DNS search domains

1. Type a search string in the *Domain search order:* text box.
2. Click *Add*. The search string is displayed in the *Domain search order* table. You can add a maximum of six search strings. Each search string entry has a *Delete* button associated with it. Click on *Delete* to remove a string from this list.

3.4.10 DNS relay

This option allows you to create, configure, and delete DNS relay's primary and secondary DNS servers. DNS relay can forward DNS queries to the DNS servers on this list.
From the *Configuration* menu, click on *DNS Relay*. The following page is displayed:


Axxcelera
BROADBAND WIRELESS
AB-100
Status
Quick Start
System
Configuration
Save config
Authentication
LAN connection
Security
WAN connections
IP routes
DHCP server
DHCP relay
DNS client
DNS relay
Ports
DNS Relay
This page allows you to enter a list of DNS server IP addresses that the DNS relay can forward DNS queries to. It also allows access to the DNS relay LAN database...
Edit DNS server list
Use this section to edit existing DNS server addresses present in the DNS relay's list. The first address should be the Primary DNS server, and the second address should be the Secondary DNS server. You cannot have more than two addresses at a time.
There are currently no DNS servers in the list. Use the section below to add a new DNS server.
Add new DNS server
Use this section to add a new DNS server to the DNS relay's list.
New DNS server IP address:
Apply
Copyright (c) 2003 Axxcelera Broadband Wireless.

3.4.10.1 Configuring the DNS relay list

1. In the *Add new DNS server* section, type an address in the *New DNS server IP address* text box.
2. Click on *Apply*. The address is displayed in the *Edit DNS server list* section.
3. To delete an entry, check *Delete?* box for a IP address, then click on *Apply*.

3.5 Ports

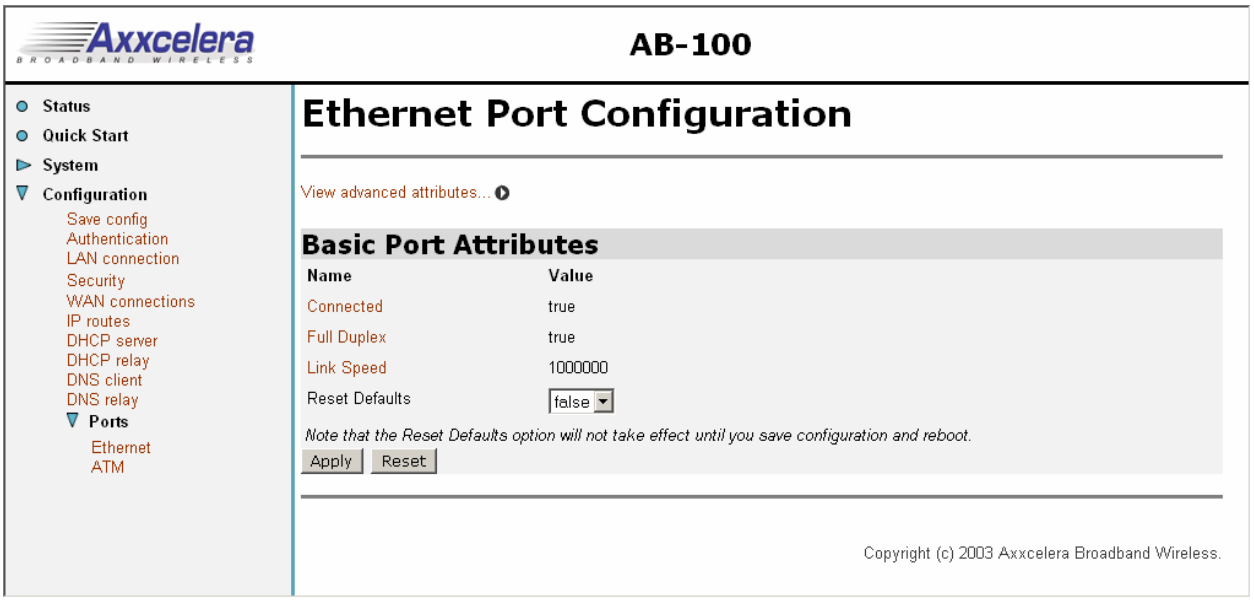
This option allows you to configure the ports available on your AB-100 system. AB-100 has two ports one Ethernet port and one ATM port.

3.5.1 Configuring ports

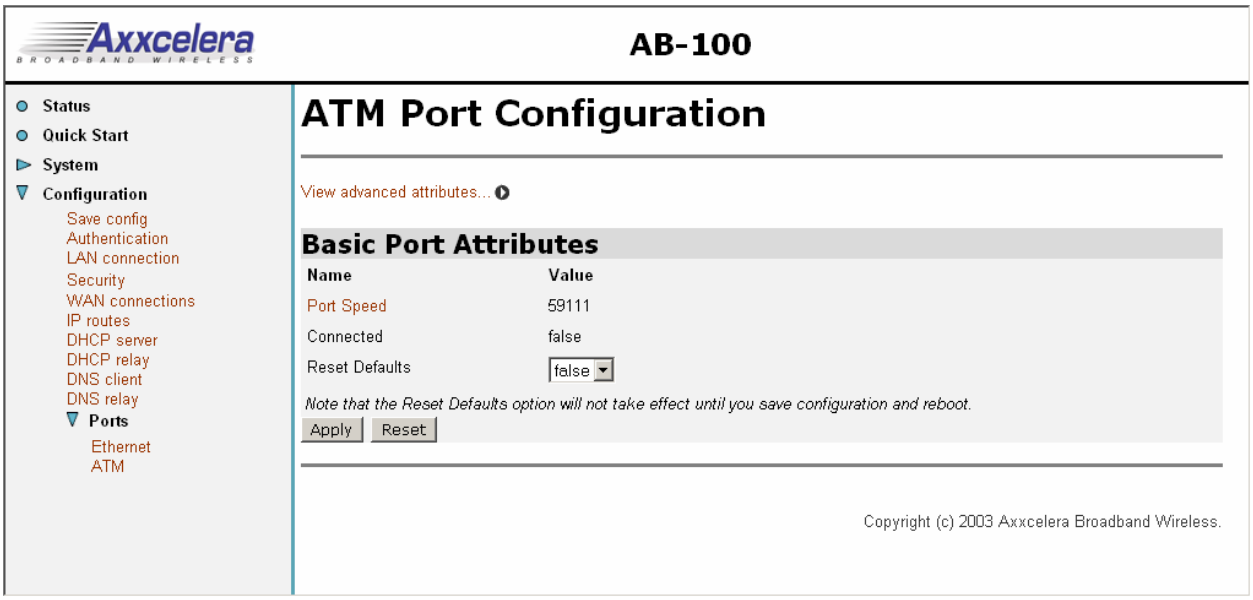
1. From the left-hand menu, click on *Configuration*. From the *Configuration* menu, click on *Ports*. A sub-list of ports available on your AB-100 is displayed. The following ports are available on the AB-100:
   - Ethernet
   - ATM
2. From the *Ports* menu, click on *Ethernet*. The *Ethernet Port Configuration* page is displayed: See Ethernet. The page displays basic port attributes for the Ethernet port on your AB-100 system. Click on one of the attribute names to display help information about each entry.
3. You can carry out advanced configuration of your Ethernet port attributes. From the *Ethernet Port Configuration* page, click on *View advanced attributes*. The *Advanced Ethernet Port Configuration* page is displayed. Click on one of the advanced attribute names to display help information about each entry. Update the port attributes that are available for editing, then click on *Apply* to update the advanced configuration settings. Click on the *Return to basic attribute* list to return to the *Ethernet Port Configuration* page

These same steps can be taken to review/modify the ATM port configuration.

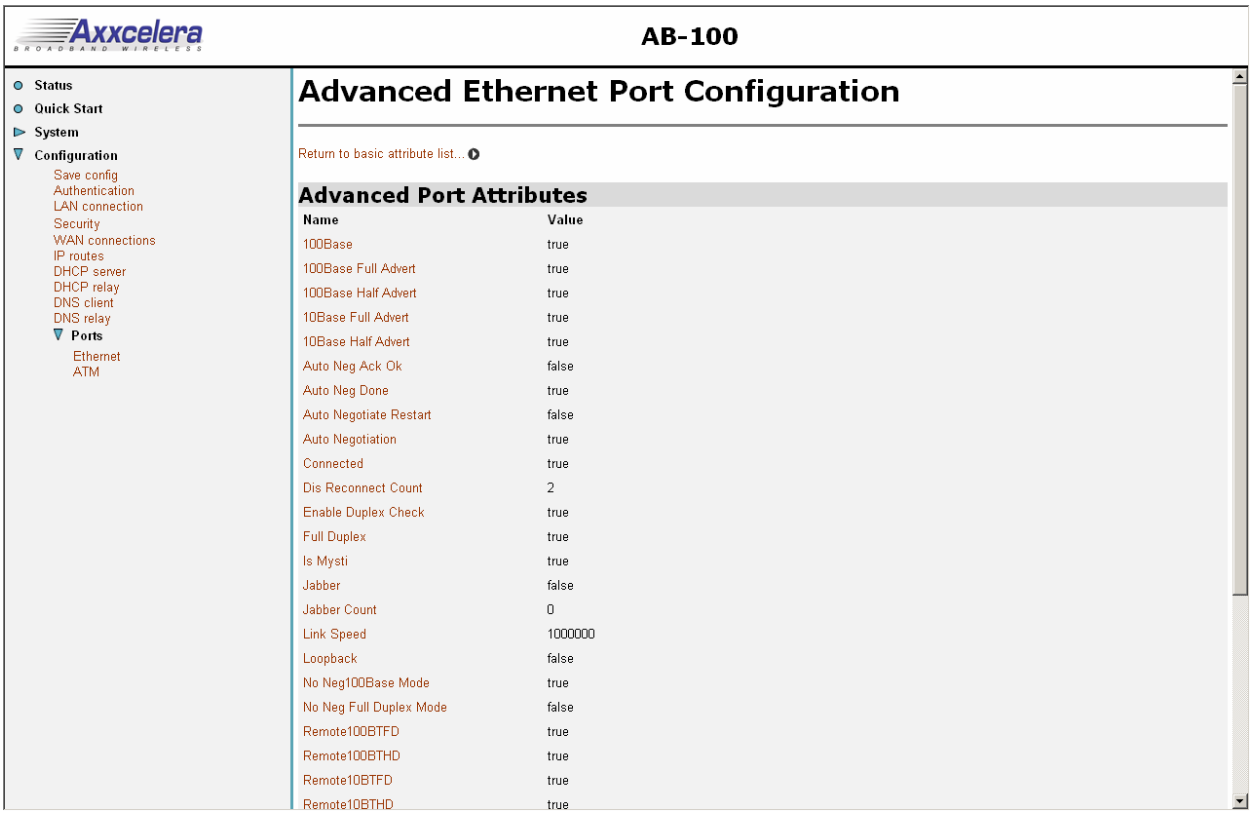
3.5.1.1 Ethernet



3.5.1.2 ATM



3.5.1.3 View advanced attributes

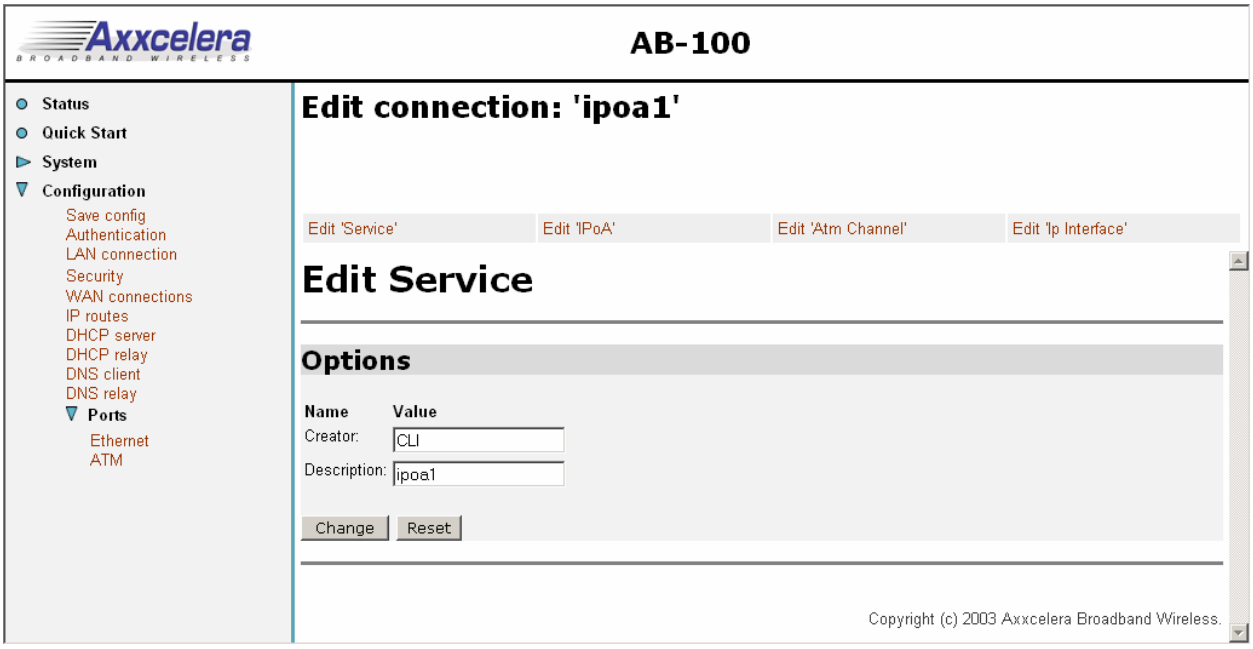


Section 4

4 Advanced Options

4.1 Edit 'Service'

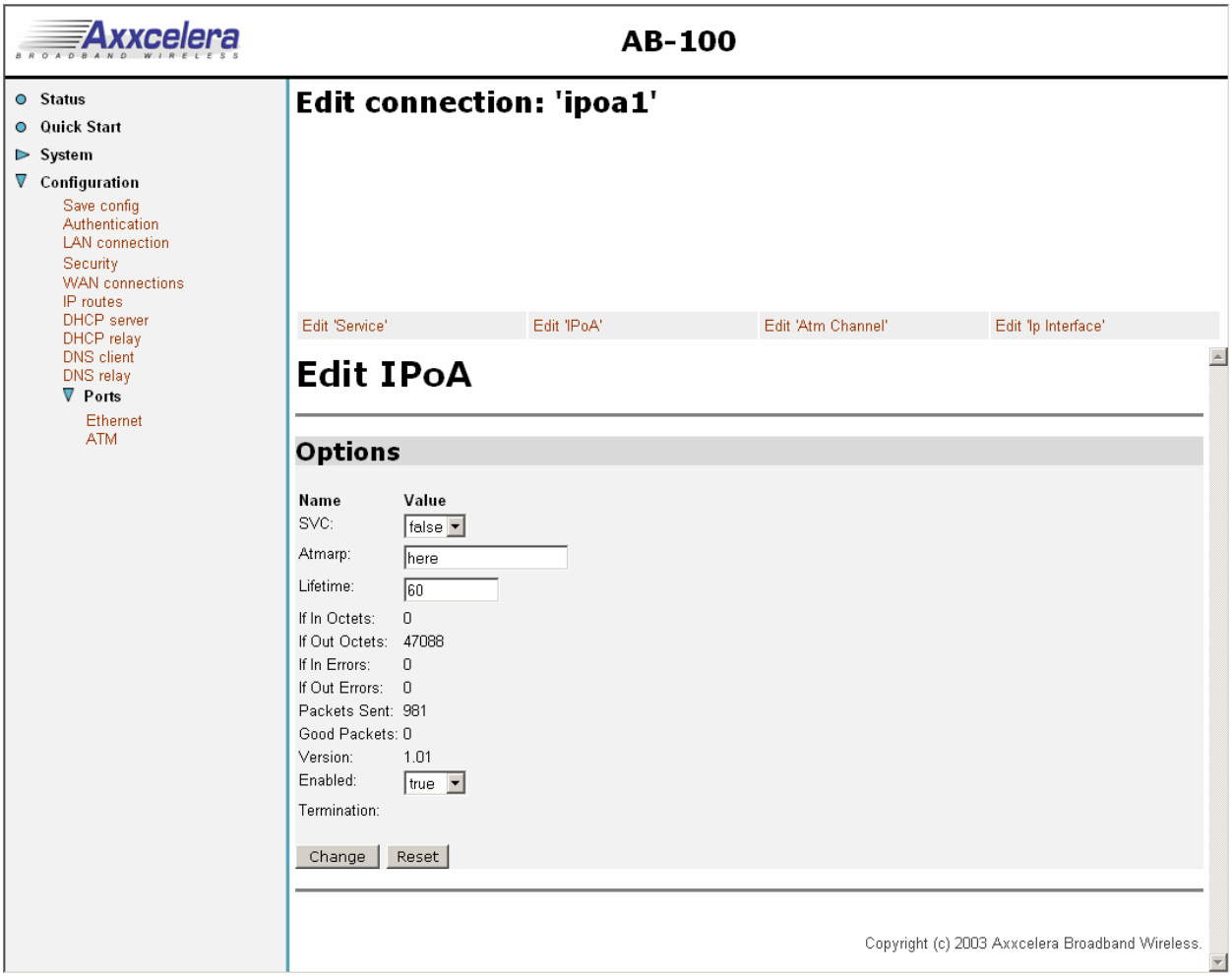
Name	Value	Description
Creator	{WebAdmin | CLI}	Displays the name of the config interface in which the service was created.
Desctiption	Text field	Text field that can be used to help identify the item.



4.2 Edit 'IPoA'

Name	Value	Description
SVC	{true | false}	Enables Switched Virtual Circuits.
Atmarp	{here | <a.b.c.d>	Sets the Atmarp server, for the local machine use "here" for a remote machine use its IP Address.
Lifetime	{0-x}	ATM cell lifetime in seconds. Similar to the TTL in an Ethernet frame.
If In Octets	#	Number or bytes received on interface.
If Out Octets	#	Number of bytes transmitted on interface.
If In Errors	#	Number of errors received on interface.
If Out Errors	#	Number of errors transmitted on interface.

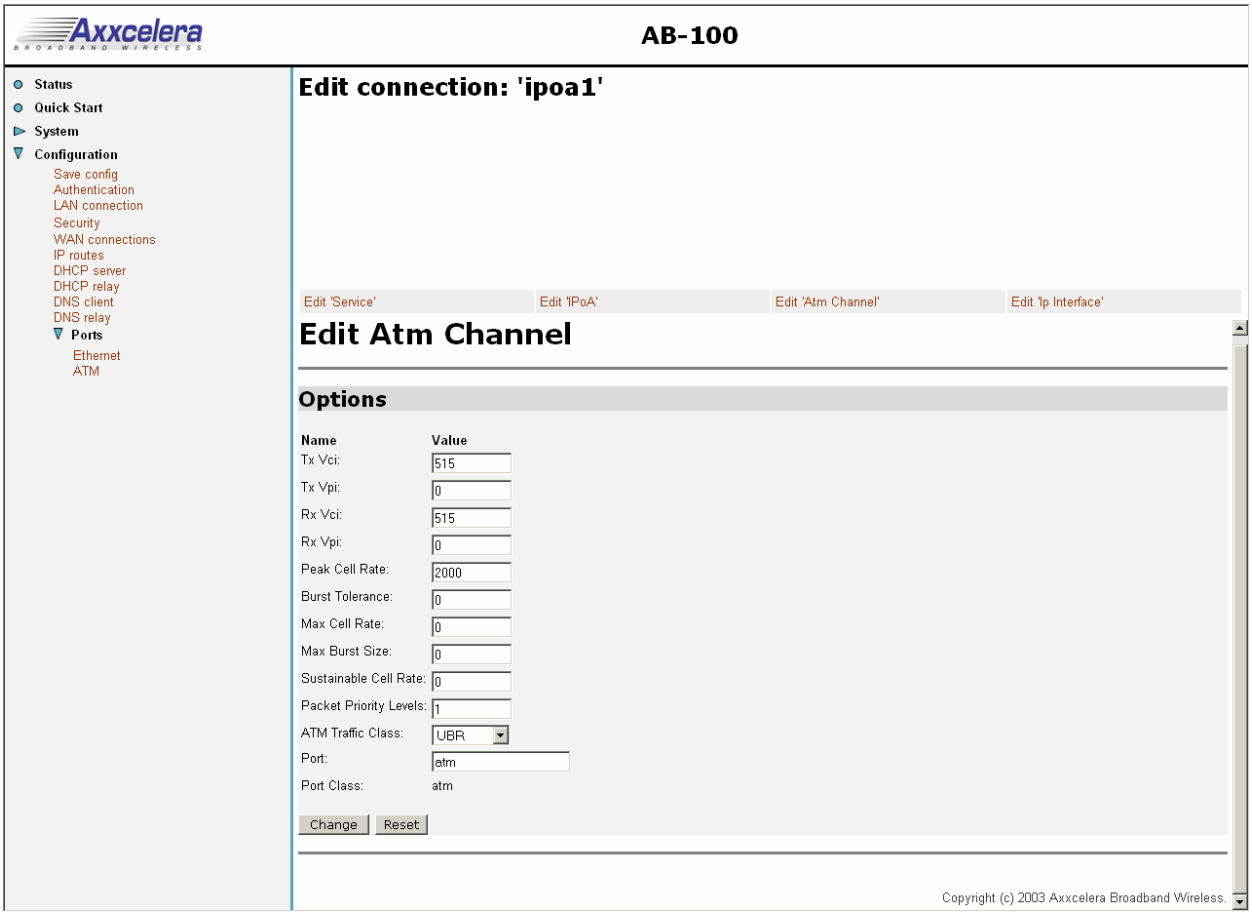
Packets Sent	#	Number of packets sent on interface.
Good Packets	#	Number of good packets sent on interface.
Version	#	Current version of the IPoA driver.
Enabled	{true | false}	Enables or disables interface.
Termination	N/A	Currently not used.



4.3 Edit 'Atm Channel'

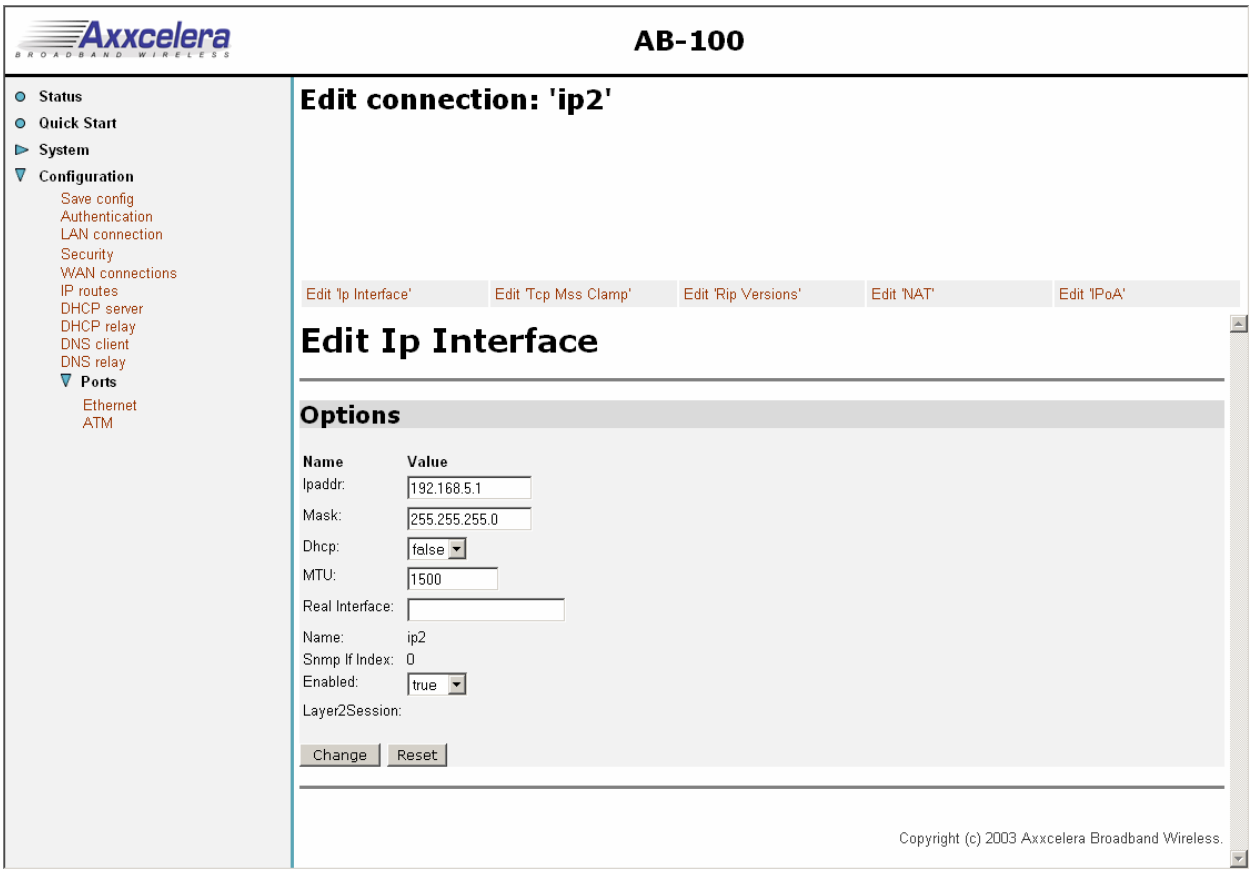
Name	Value	Description
TX VCI	{0-65536}	Transmit Virtual Circuit Identifier
TX VPI	{0-256}	Transmit Virtual Path Identifier
RX VCI	{0-65536}	Receive Virtual Circuit Identifier
RX VPI	{0-256}	Receive Virtual Path Identifier
Peak Cell Rate	{0-70000}	The maximum number of cells allowed to pass through the PVC in a second.
Burst Tolerance	{0-100}	Controls the duration of traffic bursts on VBR (Variable Bit Rate) and VBR RT (VBR Real Time) channels.

Max Cell Rate	#	Determines the maximum rate at which ATM cells are allowed to be sent along the PPPoA transport.
Max Burst Size	{0-100}	Controls the maximum burst size for VBR and VBR-rt channels. This value overrides an existing BT value (if set).
Sustainable Cell Rate	Any positive number that is less than the PortSpeed and the PCR for the channel.	The average cell rate for a VBR or VBR RT connection.
Packet Priority Levels	#	The number of priority levels available on an ATM transport.
ATM Traffic Class	{UBR | CBR | VBR-rt | VBR | ABR | UBRPlus | QFC}	Set the traffic class for the channel. Channels connected to AB-Access should always use the default of UBR.
Port	atm	Allows user to set the type of port, which will always be atm.
Port Class	atm	Displays the type of port.



4.4 Edit 'Ip Interface'

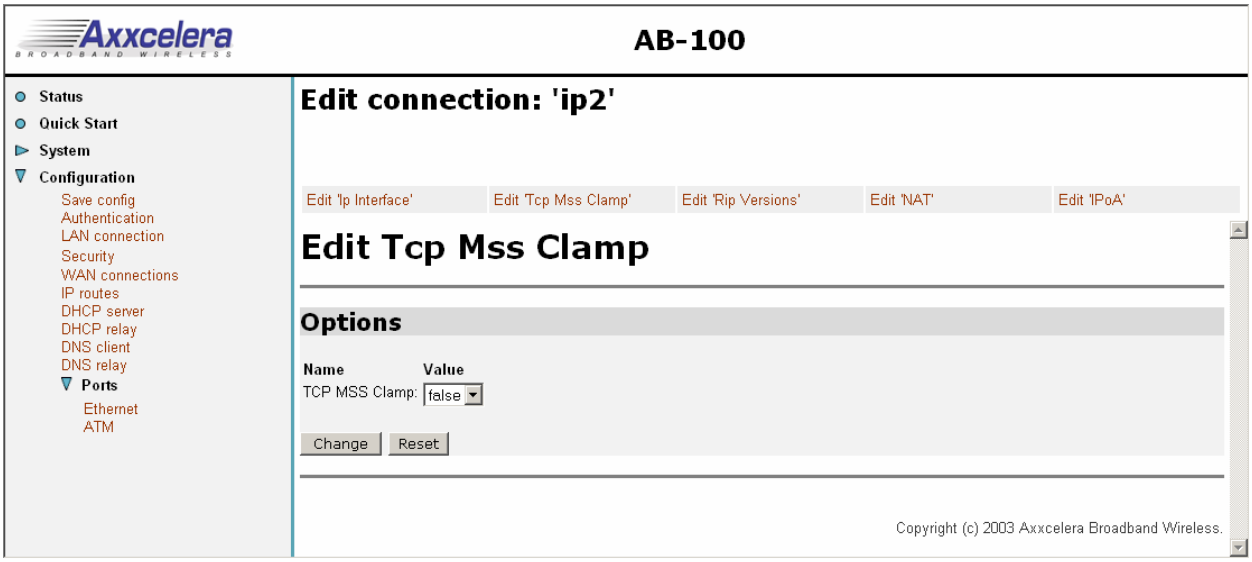
Name	Value	Description
Ipaddr	{a.b.c.d}	IP Address for the defined interface.
Mask	{a.b.c.d}	Subnet Mask for the defined interface.
Dhcp	{true | false}	Enable DHCP client on defined interface.
MTU	{576-1500}	Maximum Transmission Unit sets the maximum size of an Ethernet frame that will be passed through the interface.
Real Interface	Interface name	Displays the real interface that a virtual interface is attached to.
Name	Interface name	The name of the WAN service as defined by AB-100 when created.
Snmp If Index		
Enabled	{true | false}	Allows user to enable or disable the interface.
Layer2Session	N/A	N/A



4.5 Edit 'Tcp Mss Clamp'

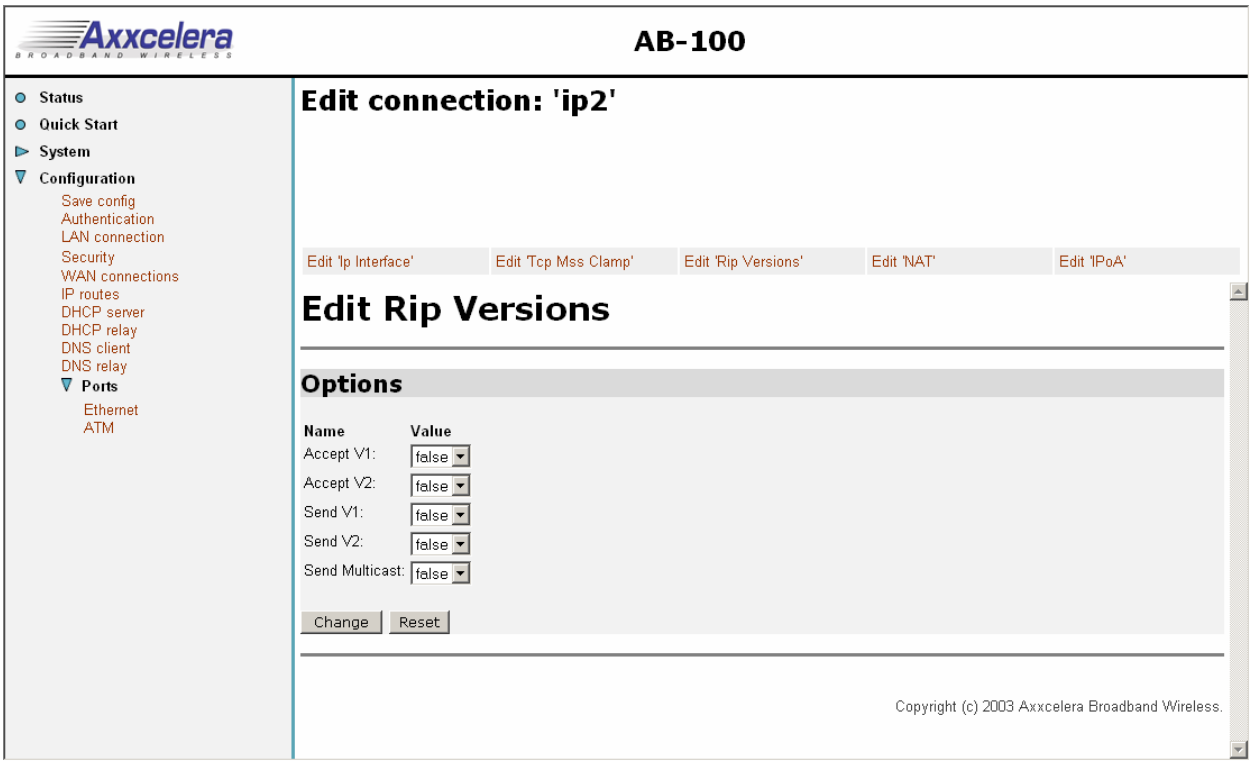
Name	Value	Description

TCP MSS Clamp	{true | false}	Enables or disables TCP MSS (Maximum Segment Size) Clamp functionality on an existing IP interface. When TCP MSS Clamp is enable on an interface, all TCP traffic routed through that interface will be examined. If a TCP SYN (synchronize/start) segment is sent with a maximum segment size larger than the interface MTU, the MSS option will be rewritten in order to allow TCP traffic to pass through the interface without requiring fragmentation.



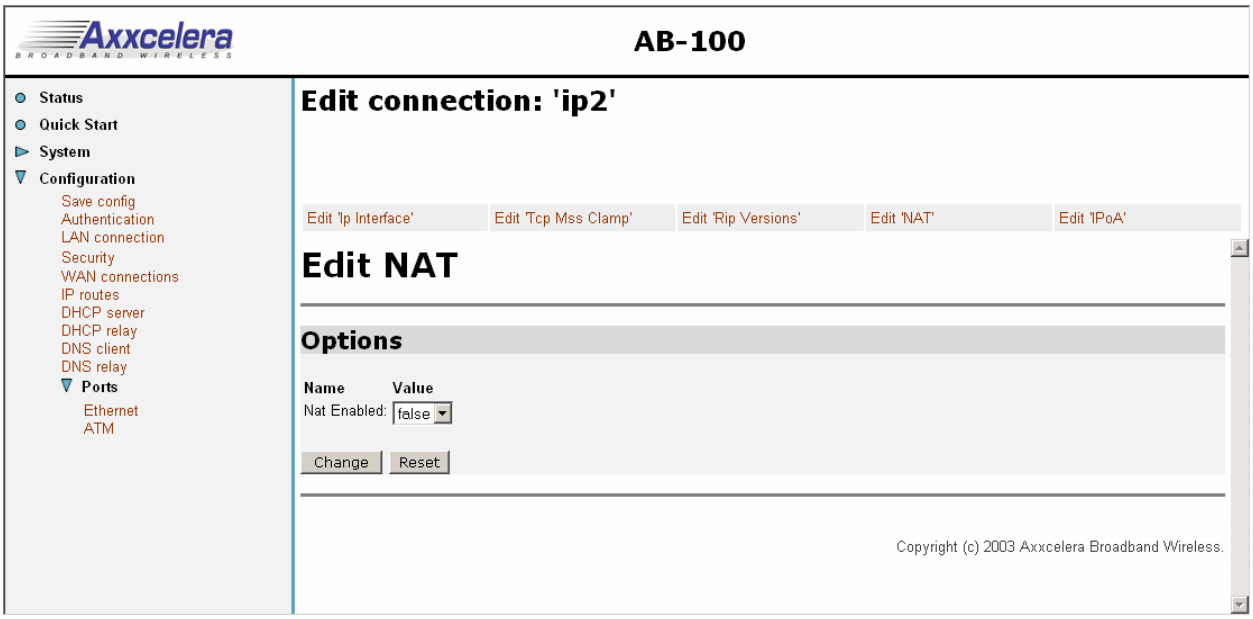
4.6 Edit 'Rip Versions'

Name	Value	Description
Accept V1	{true | false}	Controls whether the interface will accept any RIP V1 updates from other devices.
Accept V2	{true | false}	Controls whether the interface will accept any RIP V2 updates from other devices.
Send V1	{true | false}	Controls whether the interface will send any RIP V1 updates to other devices.
Send V2	{true | false}	Controls whether the interface will send any RIP V2 updates to other devices.
Send Multicast	{true | false}	Send RIP updates via multicast.



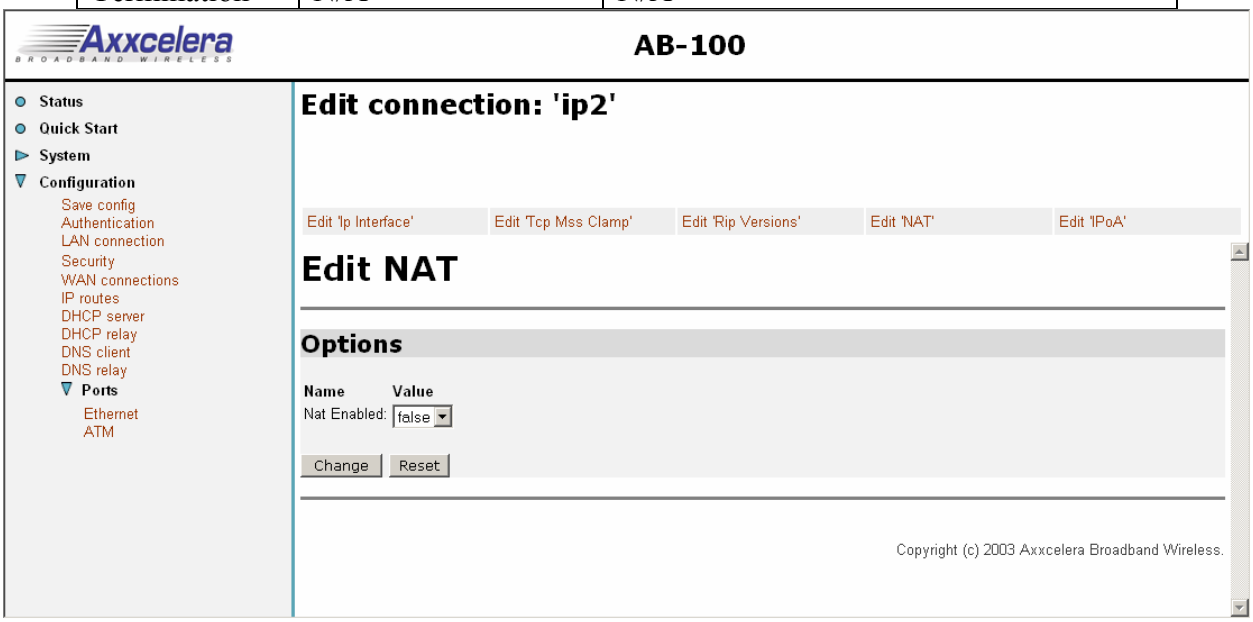
4.7 Edit 'NAT'

Name	Value	Description
Nat Enabled	{true | false}	Set whether NAT (Network Address Translation) is set on the interface.



4.8 Edit 'RFC1483'

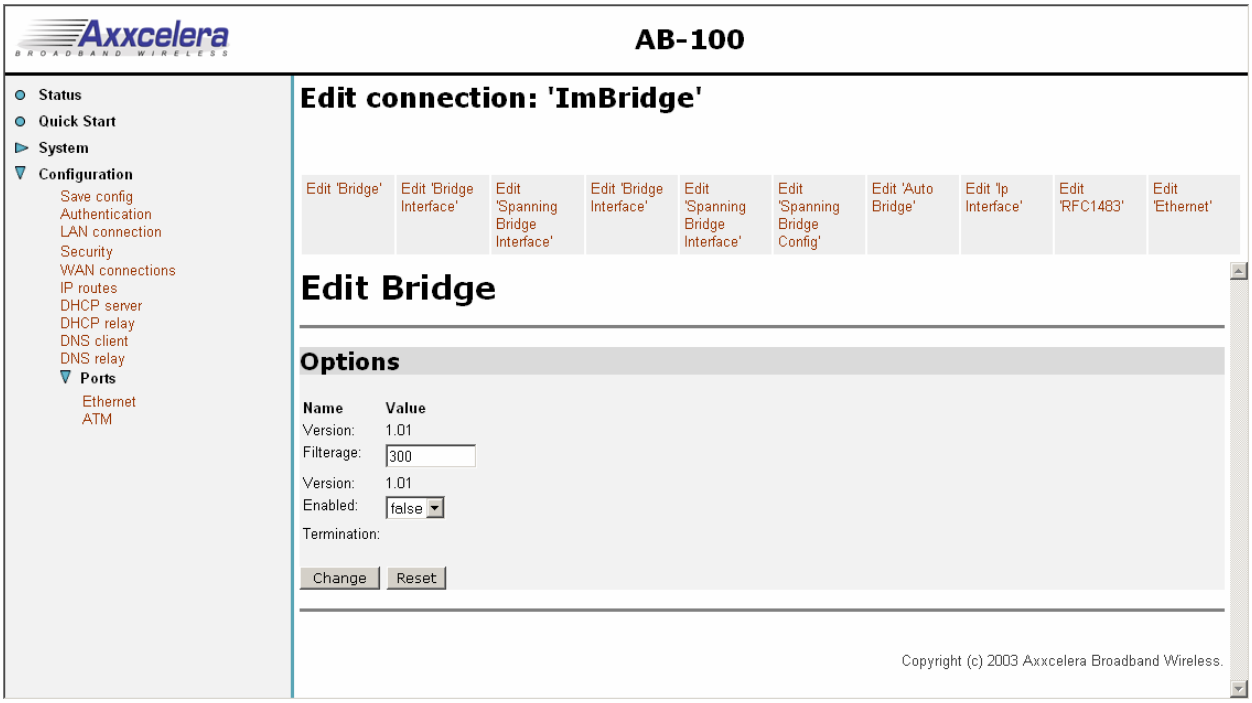
Name	Value	Description
Mode	{LlcBridged | VcMuxBridged | LlcRouted | VcMuxRouted}	Sets the mode that the bridge will operate in.
If In Octets	#	Number or bytes received on interface.
If Out Octets	#	Number of bytes transmitted on interface.
If In Errors	#	Number of errors received on interface.
If Out Errors	#	Number of errors transmitted on interface.
Packets Sent	#	Number of packets sent on interface.
Good Packets	#	Number of good packets sent on interface.
Version	#	Displays current version of 1483 drivers.
Enabled	{true | false}	Enables or disables interface.
Termination	N/A	N/A



4.9 Edit 'Bridge'

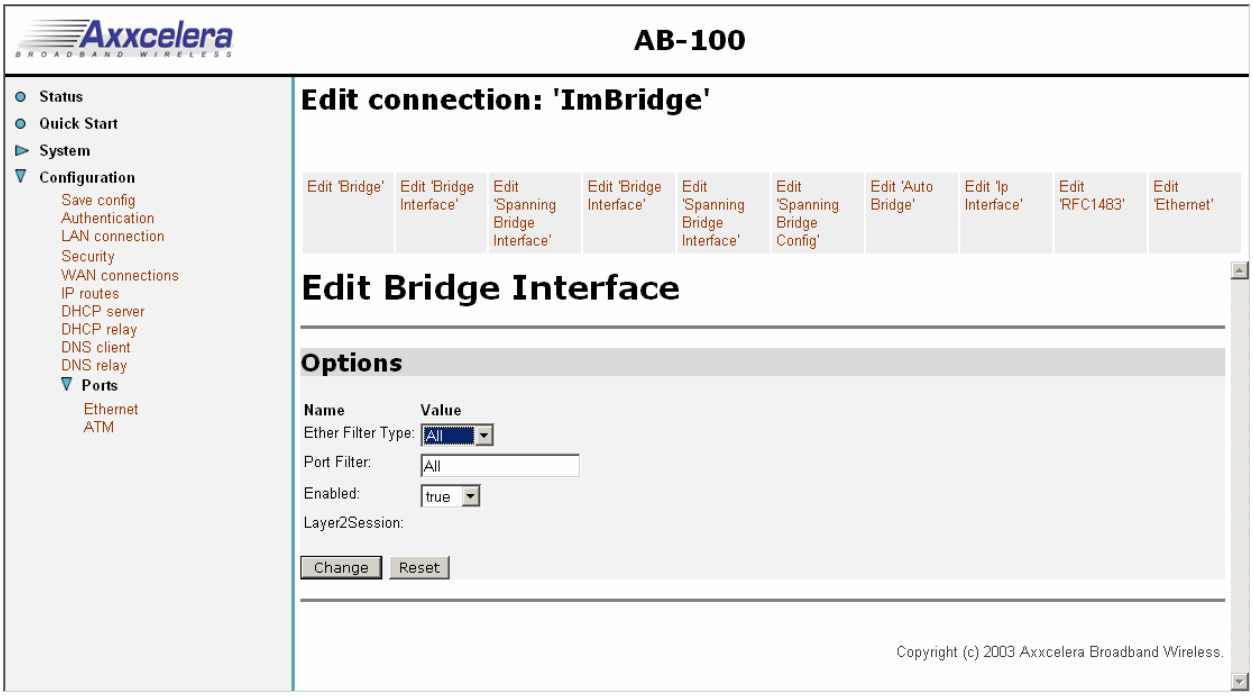
Name	Value	Description
Version	#	Displays the current version of the bridge drivers.
Filterage	{10-100,000}	The filter age is the time (in seconds) after which MAC addresses are removed from the filter table when there is no activity.
Version	#	Displays the current version of the bridge drivers.
Enabled	{true | false}	Enables or disables the bridge.

Termination	N/A	N/A



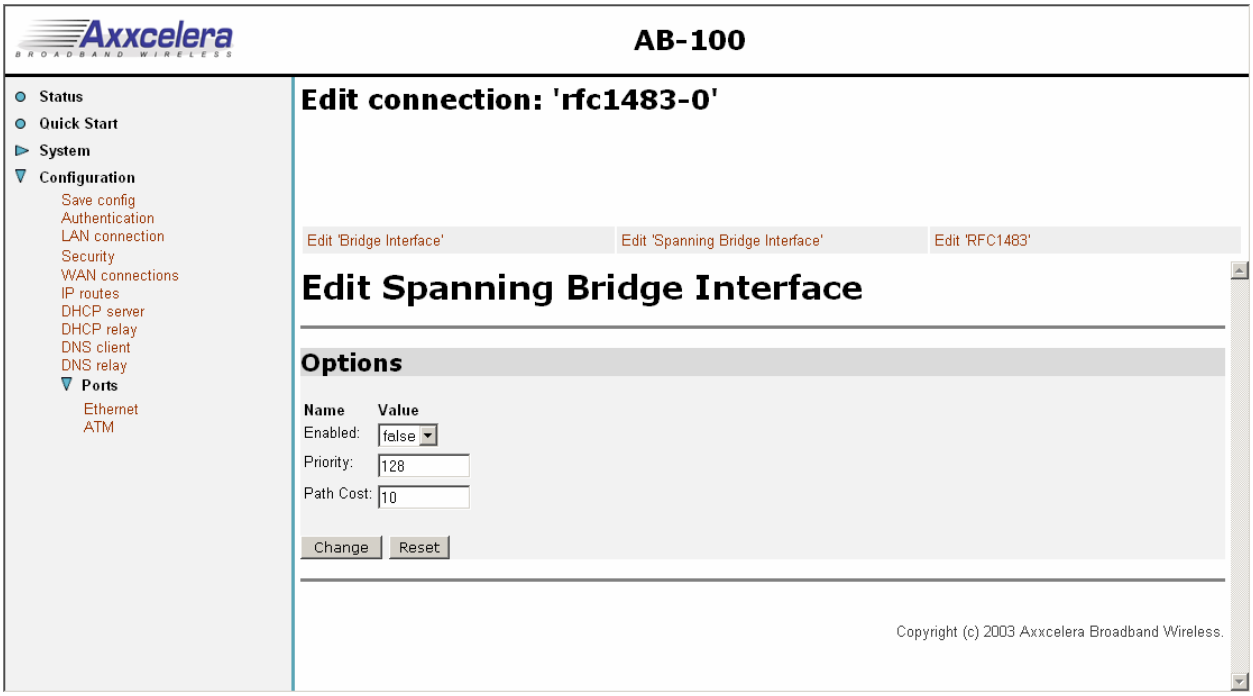
4.10 Edit 'Bridge Interface'

Name	Value	Description
Ether Filter Type	{All | Ip | Pppoe}	Allows these type of Ethernet packets through the port. All ; all type of Ethernet packets. Ip; all ip/arp type of Ethernet packets. Pppoe; only PPPoE types of Ethernet packts.
Port Filter	{all | *port*}	The name of the existing port that you wan packets, received on a specified bridge interface, to be forwarded to. If the value is "all" it will forward packets, received on a specified bridge interface, to all existing bridge ports.
Enabled	{true | false}	Enables or disables this feature.
Layer2Session	N/A	N/A



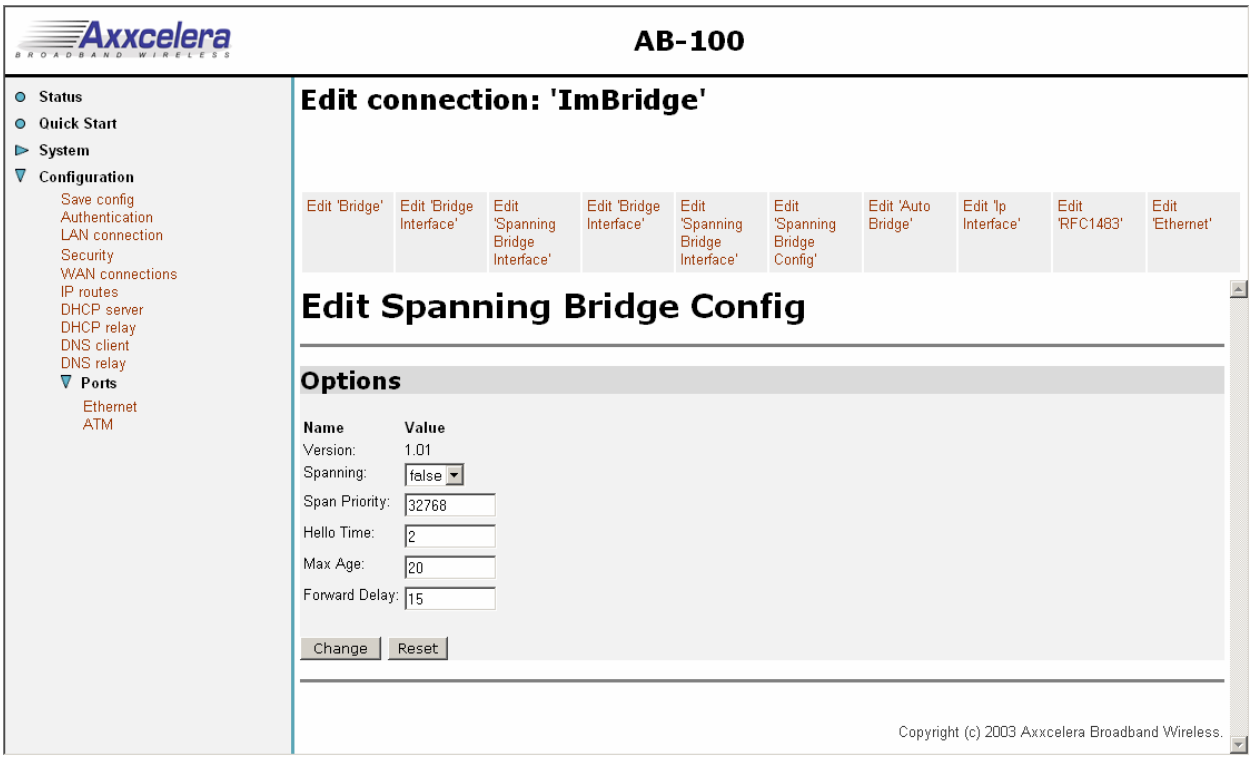
4.11 Edit Spanning Bridge Interface'

Name	Value	Description
Enabled	{true | false}	Enables or disables the bridge's ability to use the spanning tree protocol.
Priority	{0-255}	The priority is used in conjunction with the pathcost to determine the best root to the root bridge. The higher the priority number, the less significant, in protocol terms, the port.
Path Cost	{1-65535}	The cost of the port is used when deciding which is the best path to the root bridge.



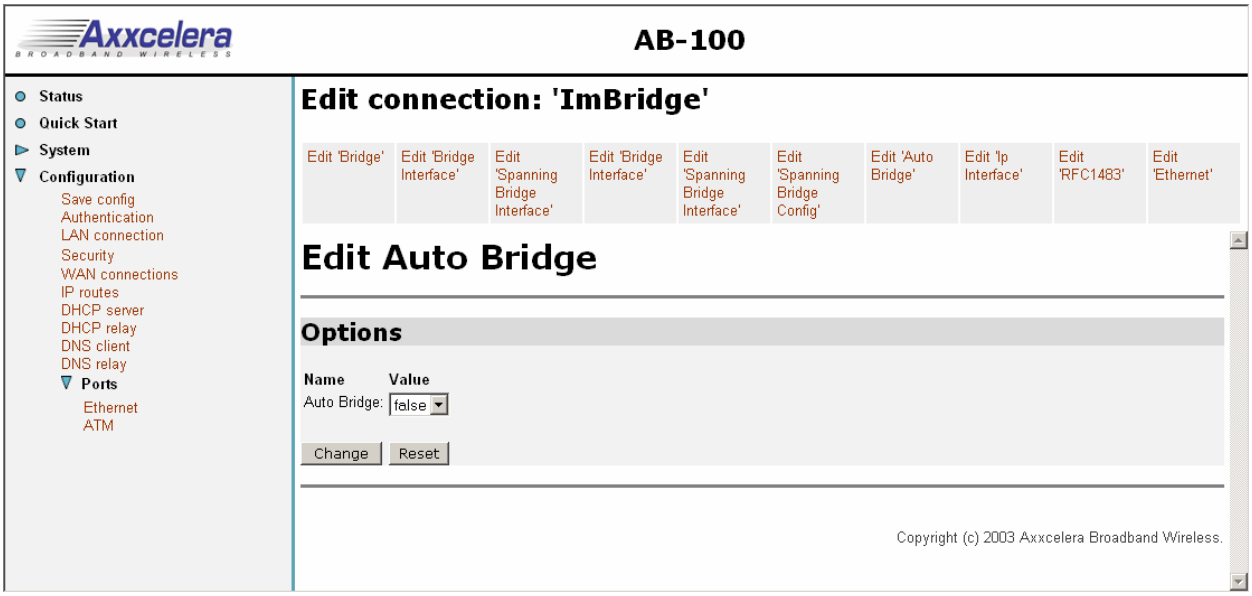
4.12 Edit 'Spanning Bridge Config'

Name	Value	Description
Version	#	Displays the current version of the spanning tree drivers.
Spanning	{true | false}	Specifies whether or not the bridge is to implement the spanning tree protocol.
Span Priority	{0-65535}	Sets the spanning tree protocol priority. Where two bridges have the same priority, their MAC address is compared and the smaller MAC address is treated as the most significant.
Hello Time	{1-10}	Sets the time after which the spanning tree process sends notification of topology changes to the root bridge.
Max Age	{6-40}	Sets the maximum age of received spanning tree protocol information before it is discarded. This is used when the bridge is or is attempting to become the root bridge.
Forward Delay	{4-30}	Sets the time that the bridge spends in listening or learning states when the bridge is or is attempting become the root bridge.



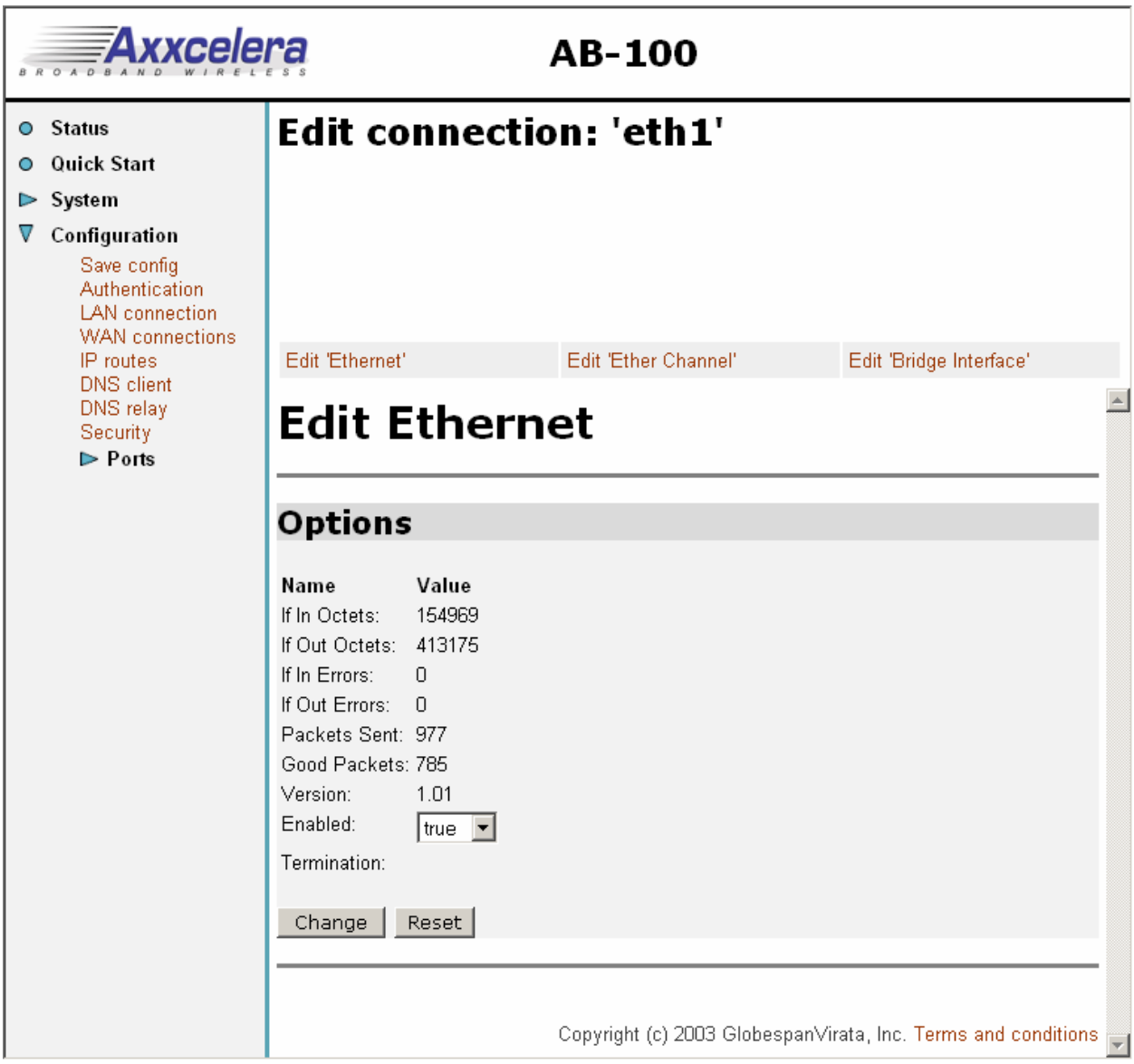
4.13 Edit 'Auto Bridge'

Name	Value	Description
Auto Bridge	{true | false}	Enables or disables auto bridge.



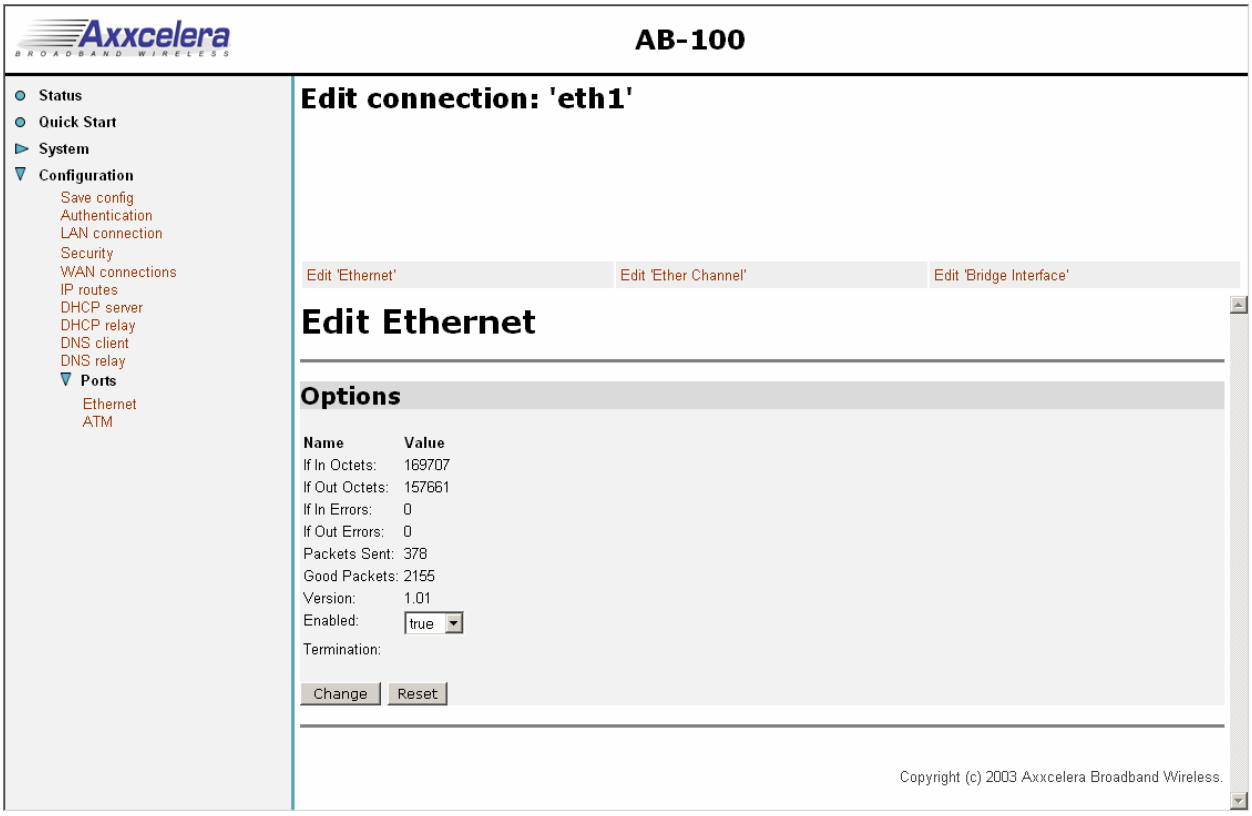
4.14 Edit 'Ethernet'

Name	Value	Description
If In Octets	#	Number or bytes received on interface.
If Out Octets	#	Number of bytes transmitted on interface.
If In Errors	#	Number of errors received on interface.
If Out Errors	#	Number of errors transmitted on interface.
Packets Sent	#	Number of packets sent on interface.
Good Packets	#	Number of good packets sent on interface.
Version	#	Current version of Ethernet driver.
Enabled	{true | false}	Enables or disables interface.
Termination	N/A	N/A



4.15 Edit 'Ether Channel'

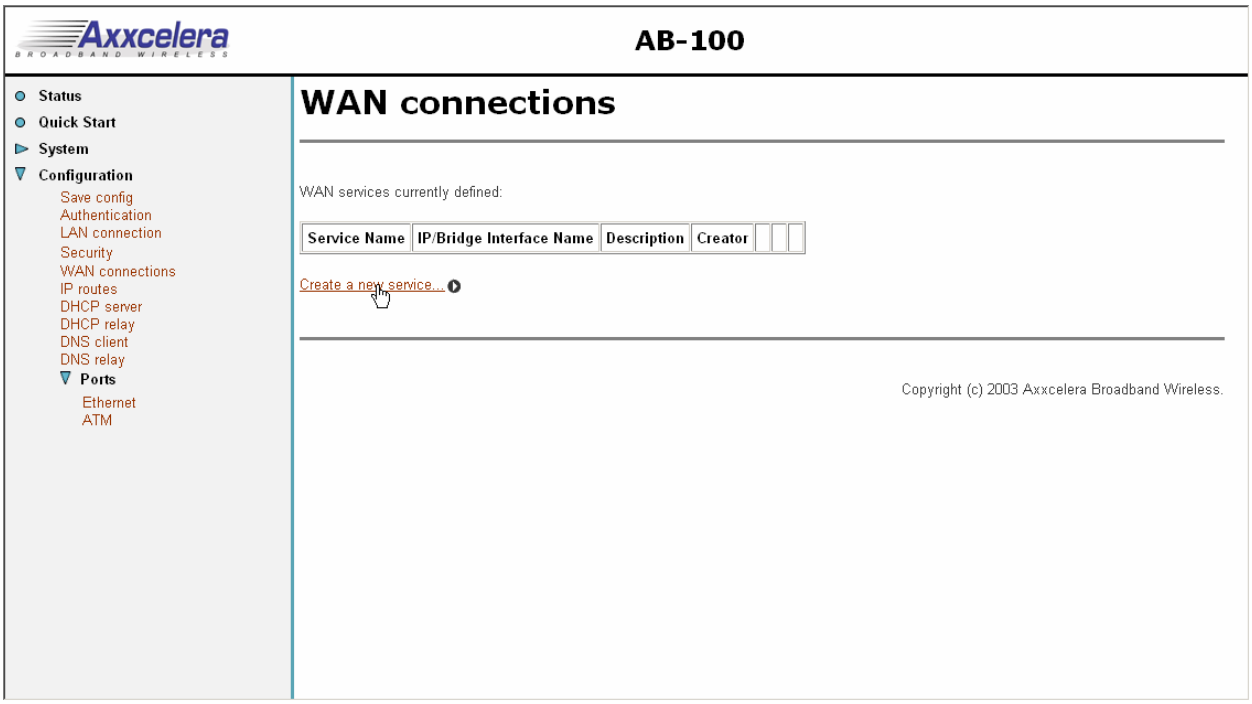
Name	Value	Description
Port	{text field}	Enter class of port. Should be left to default.
Port Class	Ethernet	Displays class of port.



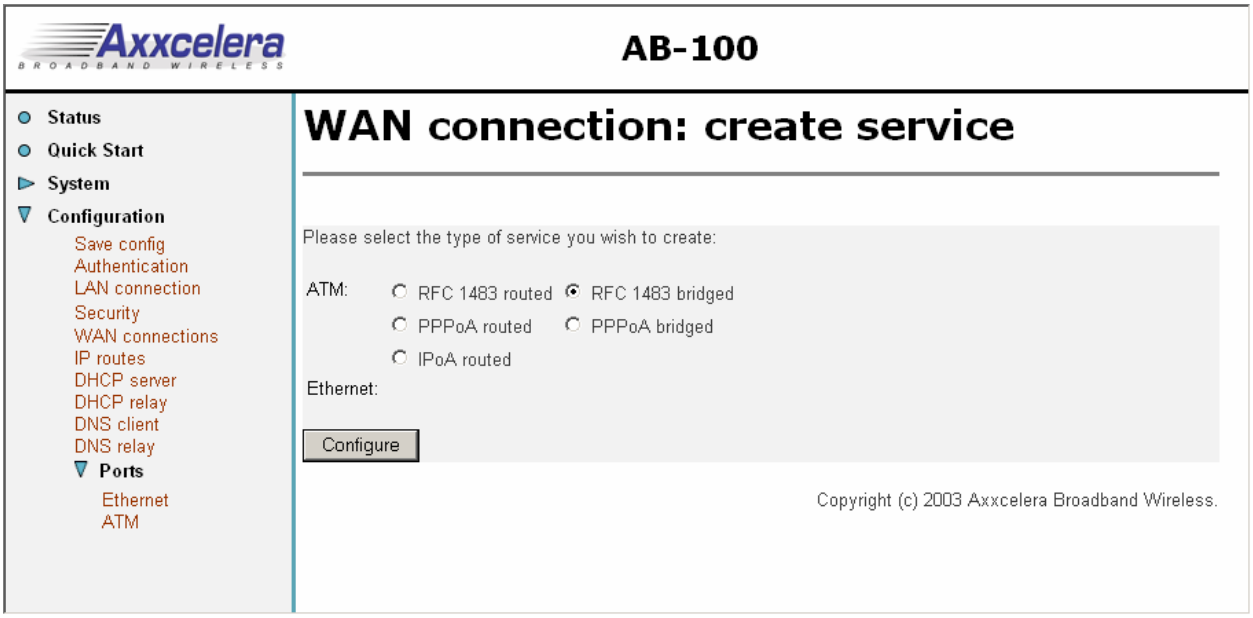
Section 5

5 Configuring 1483 (bridged)

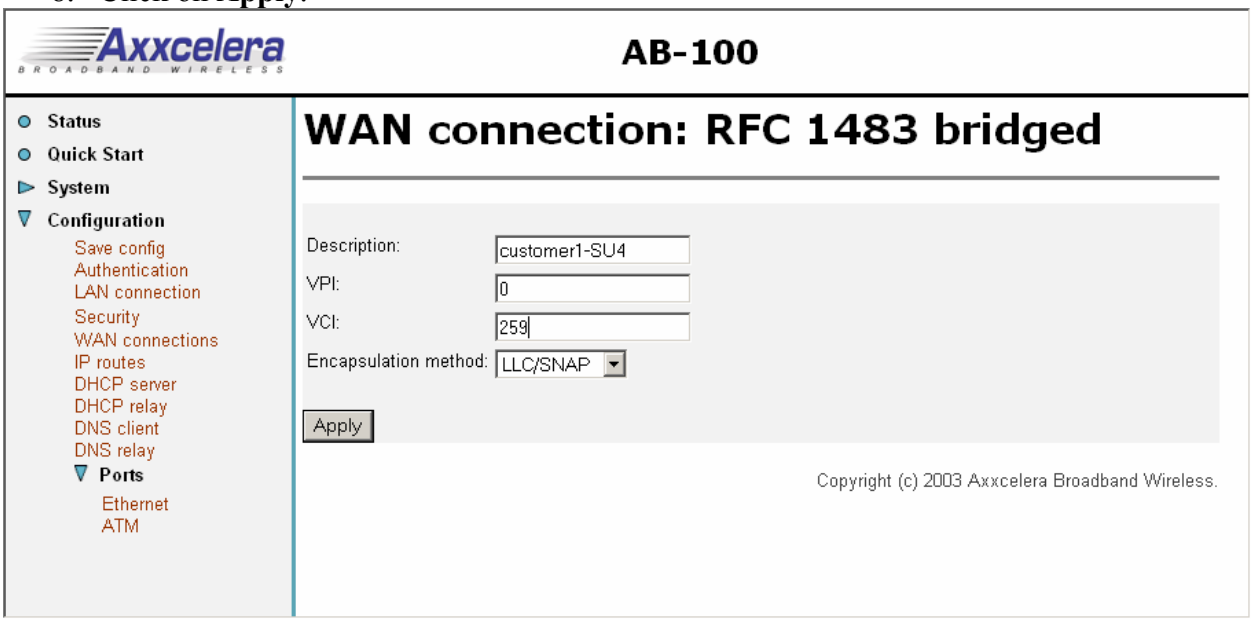
1. Open web browser.
2. Click on **Configuration**.
3. Click on **WAN connections**.



4. Click on **Create a new service**.
5. Select **RFC 1483 bridged**
6. Click on **Configure**.



7. Fill in the following fields…
   a. **Description:** Description text field.
   b. **VPI:** Virtual Path Identifier.
      NOTE: AB-Access only supports VPI 0-7 on terrestrial interface.
   c. **VCI:** Virtual Circuit Identifier.
   d. **Encapsulation method:** *LLC/SNAP* or *VcMux(null)*.
      NOTE: AB-Access only supports LLC/SNAP encapsulation.
8. Click on **Apply**.

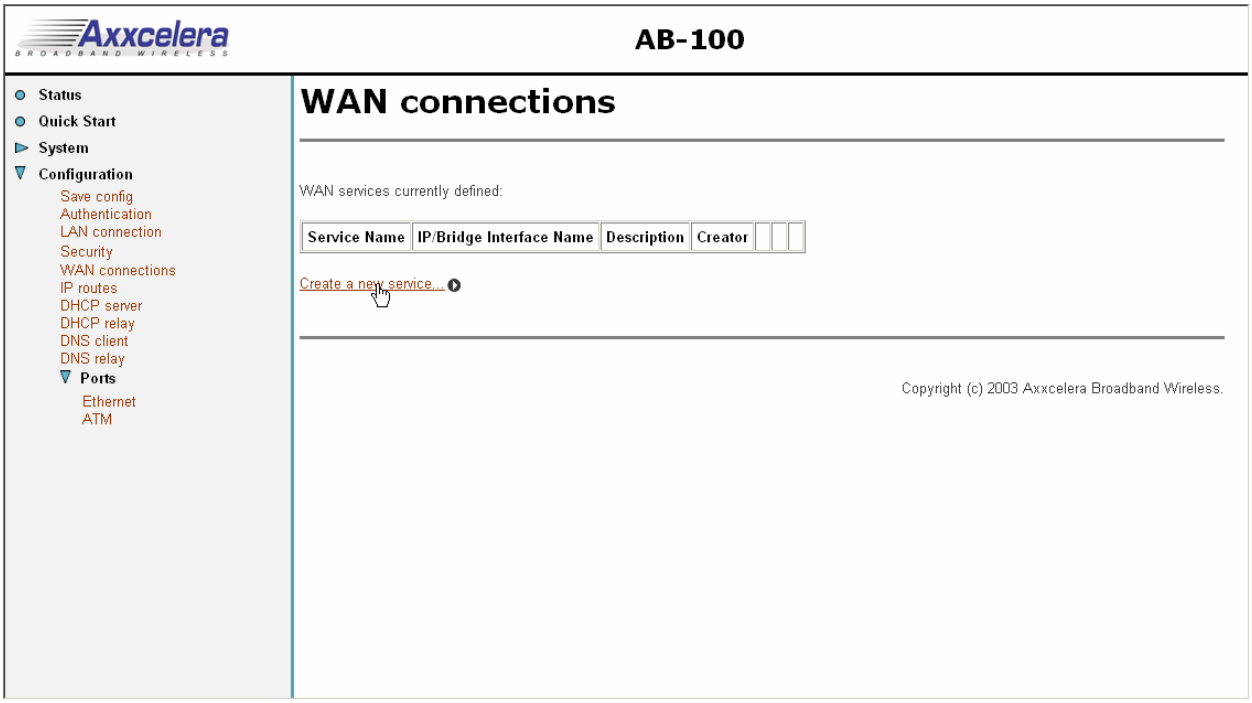


Section 6

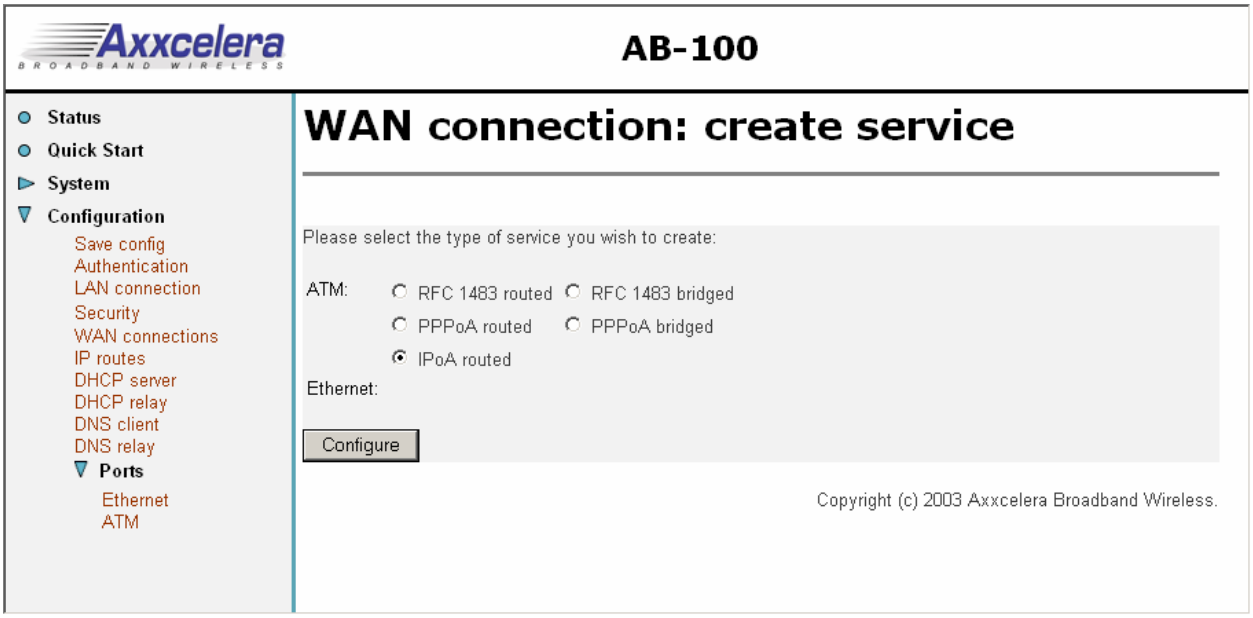
6 Configuring CLIP (IPoA)

The CLIP_S and CLIP_T configuration are setup the same on AB-100. The only difference is that in CLIP_T you only need to create one WAN (IPoA routed) connection. The CLIP_S configuration requires that you create a different WAN (IPoA routed) for each SU in the sector.

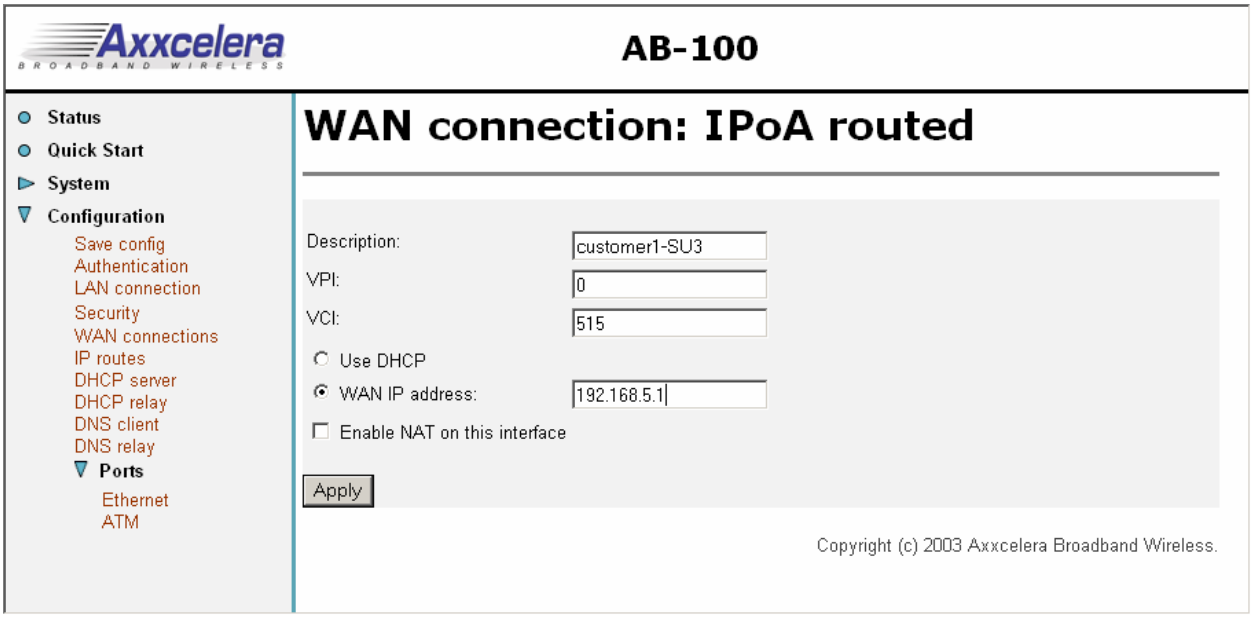
1. Open web browser.
2. Click on **Configuration**.
3. Click on **WAN connections**.



4. Click on **Create a new service**.
5. Select **IPoA routed**.
6. Click on **Configure**.

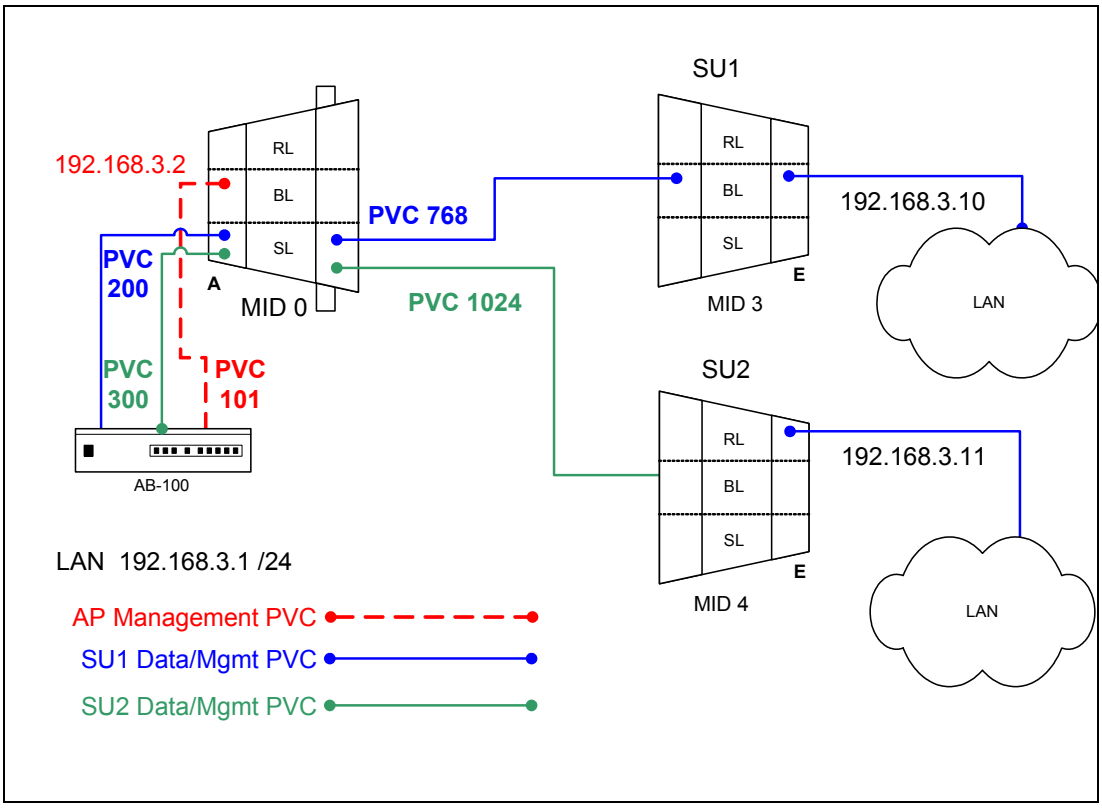


7. Fill in the following fields…
   a. **Description:** Description text field.
   b. **VPI:** Virtual Path Identifier.
      NOTE: AB-Access only supports VPI 0-7 on terrestrial interface.
   c. **VCI:** Virtual Circuit Identifier.
   d. **WAN IP address:** IP address assigned to the ATM WAN interface. This address is the address the ipatm pvc's in the resolve file of each SU will terminate on.
8. Click on **Apply**.



Section 7

7 AB-100 / AB-Access 1483_S system



7.1 AB-Access Configuration Files

7.1.1 AP resolve

```
device add bridge ether //bridge mtu 1500 192.168.3.2

subnet add bridge.home . 192.168.3.0 ff:ff:ff:00

rip send all none
rip accept all none

route add default 0.0.0.0 192.168.3.1 00:00:00:00 1 # MAN
relay all
ipatm lifetime 60
```

7.1.2 AP system.conf

```
channel 0
antenna horizontal
mode static
mid 0
bid 0
interface atm0
backoff 0
provider abw
key Axxcelera
mask 1ffff
leds active
max_mid 254
```

7.1.3 AP initbridge

```
spanning disable
device add edd
device add r1483
```

7.1.4 AP initr1483

```
pvc 0/101 atm25i 70000 70000
```

7.1.5 AP initswitchcli

```
tp default UBR 70000
sp default 256 stats
add atm25m 0 768 atm25i 0 200 default default perm epd
add atm25i 0 200 atm25m 0 768 default default perm epd
add atm25m 0 1024 atm25i 0 300 default default perm epd
add atm25i 0 300 atm25m 0 1024 default default perm epd
```

7.1.6 SU1 resolve

```
device  add  bridge  ether  //bridge  mtu  1500  192.168.3.10

subnet  add  bridge.home  .  192.168.3.0  ff:ff:ff:00

rip  send  all  none
rip  accept  all  none

route  add  default  0.0.0.0  192.168.3.1  00:00:00:00  1  #  MAN
relay  all
ipatm  lifetime  60
```

7.1.7 SU1 initbridge

```
spanning  disable
device  add  edd
device  add  r1483
```

7.1.8 SU1 system.conf

```
channel  0
antenna  horizontal
mode  static
mid  3
bid  0
interface  eth0
backoff  0
provider  abw
key  Axxcelera
mask  1ffff
leds  active
```

7.1.9 SU1 initr1483

```
pvc  0/768  atm25m  70000  70000
```

7.1.10 SU2 resolve

```
device  add  bridge  ether  //bridge  mtu  1500  192.168.3.11

subnet  add  bridge.home  .  192.168.3.0  ff:ff:ff:00

rip  send  all  none
rip  accept  all  none

route  add  default  0.0.0.0  192.168.3.1  00:00:00:00  1  #  MAN
relay  all
ipatm  lifetime  60
```

7.1.11 SU2 initbridge

```
spanning  disable
device  add  edd
device  add  r1483
```

7.1.12 SU2 system.conf

```
channel  0
antenna  horizontal
mode  static
mid  4
bid  0
interface  eth0
backoff  0
provider  abw
key  Axxcelera
mask  1ffff
leds  active
```

7.1.13 SU2 initr1483

```
pvc  0/1024  atm25m  70000  70000
```

7.2 AB-100 icf config file

This file can be retrieved and loaded through the Backup/Restore page.

```
# Information Model configuration file

version 4
N ImIGMPProxy ImIGMPProxy
```

```
      A forwardAll false
N ImRip ImRip
      A hostRoutes false
      A poison false
      A authEnable false
      A authPassword ''
      A advertiseDefaultRoute false
      A defaultRouteCost 1
N ImBridge ImBridge
      A filterage 300
      A enabled false
      A layer2SessionUser ImRouter.ImIpInterfaces.ip1
N ImBridgeInterfaces ImBridge.ImBridgeInterfaces
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled false
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled true
      A layer2Session ImServices.eth1.eth1
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.rfc1483-0
      A etherFilterType All
      A portFilter All
      A enabled true
      A layer2Session ImServices.rfc1483-0.item0
N ImSpanningBridgeInterface ImBridge.ImBridgeInterfaces.rfc1483-
0.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.rfc1483-1
      A etherFilterType All
      A portFilter All
      A enabled true
      A layer2Session ImServices.rfc1483-1.item0
N ImSpanningBridgeInterface ImBridge.ImBridgeInterfaces.rfc1483-
1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImSpanningBridgeConfig ImBridge.ImSpanningBridgeConfig
      A spanning false
      A spanPriority 32768
      A helloTime 2
      A maxAge 20
```

```
      A forwardDelay 15
N ImDhcpClient ImDhcpClient
      A reboot 10
      A retry 300
      A backoffCutoff 120
N ImDhcpServer ImDhcpServer
      A defaultLeaseTime 43200
      A allowBootp true
      A maxLeaseTime 86400
      A allowUnknownClients true
      A enabled false
N ImDhcpRelay ImDhcpRelay
      A enabled false
N ImDnsRelay ImDnsRelay
      A relayDomainName ''
N ImDnsClient ImDnsClient
N ImFireWall ImFireWall
      A security_enable false
      A firewall_level none
      A firewall_enable false
      A IDS false
      A ClearIDSBlacklist true
      A sessionlog true
      A blockinglog true
      A IntrusionLog false
N ImFwIDS ImFireWall.ImFwIDS
      A UseBlackList false
      A UseVictimProtection false
      A DosAttackBlockDuration 1800
      A ScanAttackBlockDuration 86400
      A VictimProtectionBlockDuration 600
      A MaxTcpOpenHandshakingCount 100
      A MaxPingCount 15
      A MaxICMPCount 100
N ImProcessLogFilters ImProcessLogFilters
N ImDevice ImDevice
      A saveconfig false
N ImServices ImServices
N ImService ImServices.eth1
      A creator CLI
      A description eth1
N ImEthernet ImServices.eth1.eth1
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.eth1
N ImChannels ImServices.eth1.eth1.ImChannels
N ImEtherChannel ImServices.eth1.eth1.ImChannels.item0
      A port ethernet
N ImService ImServices.rfc1483-0
      A creator WebAdmin
      A description SU1
N ImRfc1483 ImServices.rfc1483-0.item0
      A mode LlcBridged
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.rfc1483-0
N ImChannels ImServices.rfc1483-0.item0.ImChannels
N ImAtmChannel ImServices.rfc1483-0.item0.ImChannels.item0
      A txVci 200
```

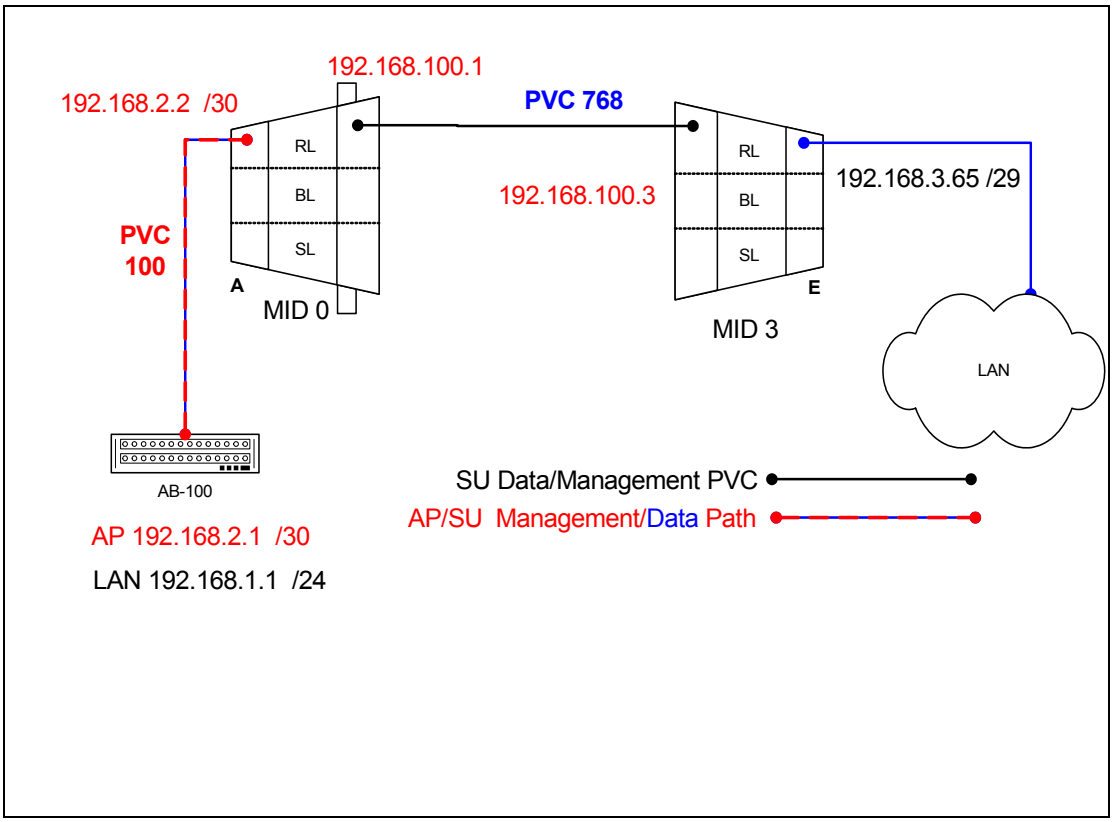
```
      A rxVci 200
      A pcr 2000
      A class UBR
      A port atm
N ImService ImServices.rfc1483-1
      A creator WebAdmin
      A description SU2
N ImRfc1483 ImServices.rfc1483-1.item0
      A mode LlcBridged
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.rfc1483-1
N ImChannels ImServices.rfc1483-1.item0.ImChannels
N ImAtmChannel ImServices.rfc1483-1.item0.ImChannels.item0
      A txVci 300
      A rxVci 300
      A pcr 2000
      A class UBR
      A port atm
N ImService ImServices.ipoa-0
      A creator WebAdmin
      A description 'AP MGMT'
N ImIpoa ImServices.ipoa-0.item0
      A svc false
      A atmarp here
      A lifetime 60
      A enabled true
      A layer2SessionUser ImRouter.ImIpInterfaces.ipoa-0
N ImChannels ImServices.ipoa-0.item0.ImChannels
N ImAtmChannel ImServices.ipoa-0.item0.ImChannels.item0
      A txVci 101
      A rxVci 101
      A pcr 2000
      A class UBR
      A port atm
N ImUsers ImUsers
N ImUser ImUsers.atmos
      A username atmos
      A password atmos
      A comment 'Created by CLI'
      A accessLevel superuser
      A mayConfigure true
      A mayDialIn true
      A pppLoginAuth none
N ImRouter ImRouter
N ImIpInterfaces ImRouter.ImIpInterfaces
N ImIpInterface ImRouter.ImIpInterfaces.ip1
      A ipaddr 192.168.3.1
      A mask 255.255.255.0
      A dhcp false
      A mtu 1500
      A enabled true
      A layer2Session ImBridge
N ImTcpMssClamp ImRouter.ImIpInterfaces.ip1.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ip1.ImRipVersions
      A acceptV1 false
      A acceptV2 false
```

```
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImIpInterface ImRouter.ImIpInterfaces.ipoa-0
      A ipaddr 192.168.100.1
      A mask 255.255.255.0
      A dhcp false
      A mtu 1500
      A enabled true
      A layer2Session ImServices.ipoa-0.item0
N ImTcpMssClamp ImRouter.ImIpInterfaces.ipoa-0.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ipoa-0.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImPorts ImPorts
N ethernet ImPorts.ethernet
      A resetDefaults false
N atm ImPorts.atm
      A resetDefaults false
N ImWebserver ImWebserver
      A httpPort 80
      A upnpPort 2800
      A telnetPort 23
      A interface ip1
      A enabled true
      A mgmtIp 0.0.0.0
      A archive //expand/isfs/derived_data.dat
      A enableAuxillaryPort true
# end
```

Section 8

8 AB-100 / AB-Access CLIP_T system

The CLIP_T configuration will allow the easiest conversion from Ethernet to ATM mode. However it does not have the small packet performance advantages that CLIP_S has. This configuration uses the AP in the exact same way that it does in Ethernet mode. So there are only minor changes and additions to the resolve and system.conf files.



8.1 AB-Access Configuration Files

8.1.1 AP resolve

```
device add atm0 atm //bun mtu 1500 192.168.2.2
device add atm1 atm //bun mtu 1500 192.168.100.1

subnet add atm0.home . 192.168.2.0 ff:ff:ff:fc
subnet add atm1.home . 192.168.100.0 ff:ff:ff:00

rip send all none
rip accept all none

route add default 0.0.0.0 192.168.2.1 00:00:00:00 1 # MAN
route add su1 192.168.3.64 192.168.100.3 ff:ff:ff:f8 1 # MAN

relay all

ipatm pvc lifetime 60

ipatm pvc atm0 atm25i 0/50 pcr 70000/70000 remoteip 192.168.2.1
ipatm pvc atm1 atm25m 0/768 pcr 70000/70000 remoteip 192.168.100.3
```

8.1.2 AP system.conf

```
channel 0
antenna horizontal
mode static
mid 0
bid 0
interface atm0
duplex half
backoff 0
provider abw
key Axxcelera
mask 1ffff
leds active
max_mid 254
```

8.1.3 SU resolve

```
device add eth0 ether //edd mtu 1500 192.168.3.65
device add atm1 atm //bun mtu 1500 192.168.100.3

subnet add eth0.home . 192.168.3.64 ff:ff:ff:f8
subnet add atm1.home . 192.168.100.0 ff:ff:ff:00

rip send all none
rip accept all none

route add default 0.0.0.0 192.168.100.1 00:00:00:00 1 # MAN

relay all

ipatm lifetime 60

ipatm pvc atm1 atm25m 0/768 pcr 70000/70000 remoteip 192.168.100.1
```

8.1.4 SU system.conf

```
channel 0
antenna horizontal
mode static
mid 3
bid 0
interface eth0
duplex half
backoff 0
provider abw
key Axxcelera
mask 1ffff
leds active
```

8.2 AB-100 icf config file

```
# Information Model configuration file

version 4
N ImIGMPProxy ImIGMPProxy
      A forwardAll false
N ImRip ImRip
      A hostRoutes false
      A poison false
```

```
      A authEnable false
      A authPassword ''
      A advertiseDefaultRoute false
      A defaultRouteCost 1
N ImBridge ImBridge
      A filterage 300
      A enabled false
      A layer2SessionUser ImRouter.ImIpInterfaces.ip1
N ImBridgeInterfaces ImBridge.ImBridgeInterfaces
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled false
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled true
      A layer2Session ImServices.eth1.eth1
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImSpanningBridgeConfig ImBridge.ImSpanningBridgeConfig
      A spanning false
      A spanPriority 32768
      A helloTime 2
      A maxAge 20
      A forwardDelay 15
N ImDhcpClient ImDhcpClient
      A reboot 10
      A retry 300
      A backoffCutoff 120
N ImDhcpServer ImDhcpServer
      A defaultLeaseTime 43200
      A allowBootp true
      A maxLeaseTime 86400
      A allowUnknownClients true
      A enabled false
N ImDhcpRelay ImDhcpRelay
      A enabled false
N ImDnsRelay ImDnsRelay
      A relayDomainName ''
N ImDnsClient ImDnsClient
N ImFireWall ImFireWall
      A security_enable false
      A firewall_level none
      A firewall_enable false
      A IDS false
      A ClearIDSBlacklist true
      A sessionlog true
      A blockinglog true
```

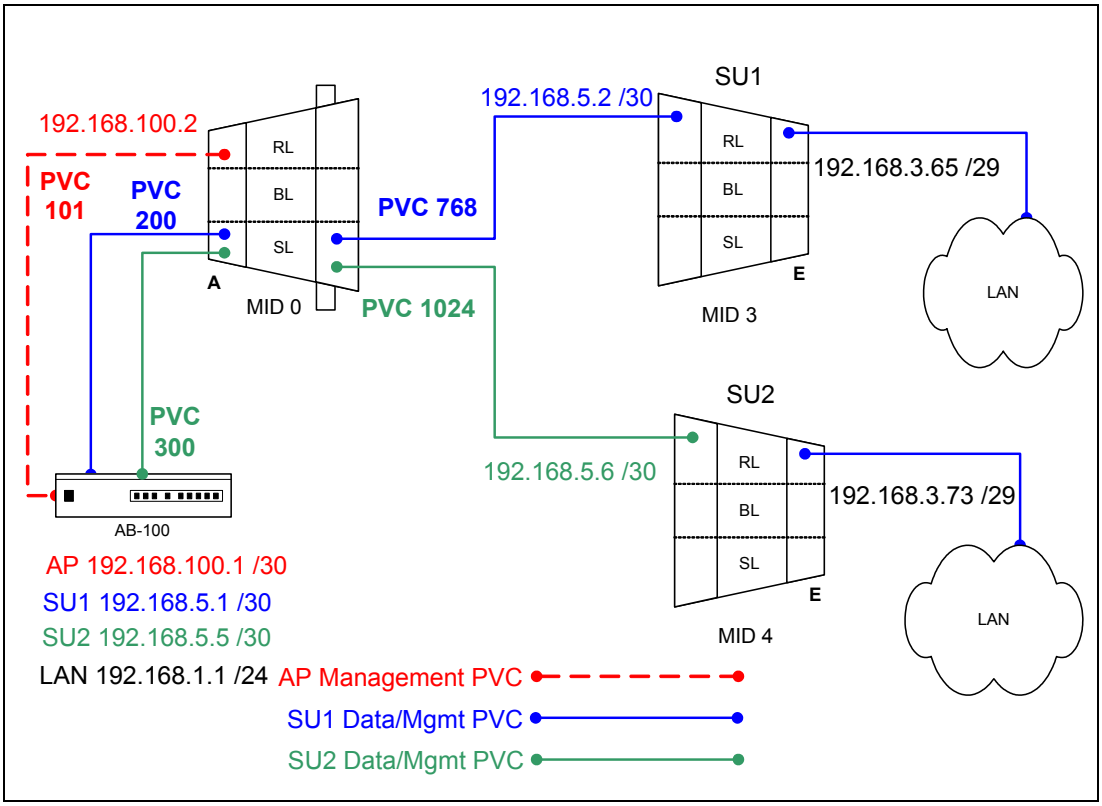
```
      A IntrusionLog false
N ImFwIDS ImFireWall.ImFwIDS
      A UseBlackList false
      A UseVictimProtection false
      A DosAttackBlockDuration 1800
      A ScanAttackBlockDuration 86400
      A VictimProtectionBlockDuration 600
      A MaxTcpOpenHandshakingCount 100
      A MaxPingCount 15
      A MaxICMPCount 100
N ImProcessLogFilters ImProcessLogFilters
N ImDevice ImDevice
      A saveconfig false
N ImServices ImServices
N ImService ImServices.eth1
      A creator CLI
      A description eth1
N ImEthernet ImServices.eth1.eth1
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.eth1
N ImChannels ImServices.eth1.eth1.ImChannels
N ImEtherChannel ImServices.eth1.eth1.ImChannels.item0
      A port ethernet
N ImService ImServices.ipoa-0
      A creator WebAdmin
      A description 'AP MGMT'
N ImIpoa ImServices.ipoa-0.item0
      A svc false
      A atmarp here
      A lifetime 60
      A enabled true
      A layer2SessionUser ImRouter.ImIpInterfaces.ipoa-0
N ImChannels ImServices.ipoa-0.item0.ImChannels
N ImAtmChannel ImServices.ipoa-0.item0.ImChannels.item0
      A txVci 100
      A rxVci 100
      A pcr 2000
      A class UBR
      A port atm
N ImUsers ImUsers
N ImUser ImUsers.atmos
      A username atmos
      A password atmos
      A comment 'Created by CLI'
      A accessLevel superuser
      A mayConfigure true
      A mayDialIn true
      A pppLoginAuth none
N ImRouter ImRouter
N ImIpInterfaces ImRouter.ImIpInterfaces
N ImIpInterface ImRouter.ImIpInterfaces.ip1
      A ipaddr 192.168.1.1
      A mask 255.255.255.0
      A dhcp false
      A mtu 1500
      A enabled true
      A layer2Session ImBridge
```

```
N ImTcpMssClamp ImRouter.ImIpInterfaces.ip1.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ip1.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImIpInterface ImRouter.ImIpInterfaces.ipoa-0
      A ipaddr 192.168.2.1
      A mask 255.255.255.252
      A dhcp false
      A mtu 1500
      A realInterface ''
      A enabled true
      A layer2Session ImServices.ipoa-0.item0
N ImTcpMssClamp ImRouter.ImIpInterfaces.ipoa-0.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ipoa-0.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImRoutes ImRouter.ImRoutes
N ImIpV4Route ImRouter.ImRoutes.item0
      A destination 192.168.100.0
      A gateway 192.168.2.2
      A netmask 255.255.255.0
      A cost 1
      A timeout 0
      A interface ''
      A advertise false
N ImIpV4Route ImRouter.ImRoutes.item1
      A destination 192.168.3.64
      A gateway 192.168.2.2
      A netmask 255.255.255.248
      A cost 1
      A timeout 0
      A interface ''
      A advertise false
N ImPorts ImPorts
N ethernet ImPorts.ethernet
      A resetDefaults false
N atm ImPorts.atm
      A resetDefaults false
N ImWebserver ImWebserver
      A httpPort 80
      A upnpPort 2800
      A telnetPort 23
      A interface ip1
      A enabled true
      A mgmtIp 0.0.0.0
      A archive //expand/isfs/derived_data.dat
      A enableAuxillaryPort true
# end
```

Section 8

9 AB-100 / AB-Access CLIP_S system

The CLIP_S configuration will give you better small packet performance than CLIP_T, however it is more difficult to convert an existing sector to CLIP_S. This is because the AB-100 only allows one IP address per PVC. So each SU must be terminated to a different IP address, this also requires that each wireless interface of each SU be assigned a new IP address. It is generally preferable to use a 252 (/30) subnet mask for each SU.



9.1 AB-Access Configuration Files

9.1.1 AP resolve

```
device add atm0 atm //bun mtu 1500 192.168.100.2

subnet add atm0.home . 192.168.100.0 ff:ff:ff:fc

rip send all none
rip accept all none

route add default 0.0.0.0 192.168.100.1 00:00:00:00 1 # MAN

relay all

ipatm lifetime 60

ipatm pvc atm0 atm25i 0/101 pcr 70000/70000 remoteip 192.168.100.1
```

9.1.2 AP system.conf

```
channel 0
antenna horizontal
mode static
mid 0
bid 0
interface atm0
backoff 0
provider abw
key Axxcelera
mask 1ffff
leds active
max_mid 254
```

9.1.3 AP initswitchcli

```
tp default UBR 2667
sp default 256 stats
add atm25m 0 768 atm25i 0 200 default default perm epd
add atm25i 0 200 atm25m 0 768 default default perm epd
add atm25m 0 1024 atm25i 0 300 default default perm epd
add atm25i 0 300 atm25m 0 1024 default default perm epd
```

9.1.4 SU1 resolve

```
device add eth0 ether //edd mtu 1500 192.168.3.65
device add atm1 atm //bun mtu 1500 192.168.5.2

subnet add eth0.home . 192.168.3.64 ff:ff:ff:f8
subnet add atm1.home . 192.168.5.0 ff:ff:ff:fc

rip send all none
rip accept all none

route add default 0.0.0.0 192.168.5.1 00:00:00:00 1 # MAN

relay all

ipatm lifetime 60

ipatm pvc atm1 atm25m 0/768 pcr 70000/70000 remoteip 192.168.5.1
```

9.1.5 SU1 system.conf

```
channel 0
antenna horizontal
mode static
mid 3
bid 0
interface eth0
duplex half
backoff 0
provider abw
key Axxcelera
mask 1ffff
leds active
```

9.1.6 SU2 resolve

```
device  add  eth0  ether  //edd  mtu  1500  192.168.3.65
device  add  atm1  atm  //bun  mtu  1500  192.168.5.6

subnet  add  eth0.home  .  192.168.3.64  ff:ff:ff:f8
subnet  add  atm1.home  .  192.168.5.4  ff:ff:ff:fc

rip  send  all  none
rip  accept  all  none

route  add  default  0.0.0.0  192.168.5.5  00:00:00:00  1  #  MAN

relay  all

ipatm  lifetime  60

ipatm  pvc  atm1  atm25m  0/1024  pcr  70000/70000  remoteip 192.168.5.5
```

9.1.7 SU2 system.conf

```
channel  0
antenna  horizontal
mode  static
mid  4
bid  0
interface  eth0
duplex half
backoff 0
provider abw
key Axxcelera
mask 1ffff
leds active
```

9.2 AB-100 icf config file

```
# Information Model configuration file

version 4
N ImIGMPProxy ImIGMPProxy
      A forwardAll false
N ImRip ImRip
      A hostRoutes false
      A poison false
      A authEnable false
```

```
      A authPassword ''
      A advertiseDefaultRoute false
      A defaultRouteCost 1
N ImBridge ImBridge
      A filterage 300
      A enabled false
      A layer2SessionUser ImRouter.ImIpInterfaces.ip1
N ImBridgeInterfaces ImBridge.ImBridgeInterfaces
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled false
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled true
      A layer2Session ImServices.eth1.eth1
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImSpanningBridgeConfig ImBridge.ImSpanningBridgeConfig
      A spanning false
      A spanPriority 32768
      A helloTime 2
      A maxAge 20
      A forwardDelay 15
N ImDhcpClient ImDhcpClient
      A reboot 10
      A retry 300
      A backoffCutoff 120
N ImDhcpServer ImDhcpServer
      A defaultLeaseTime 43200
      A allowBootp true
      A maxLeaseTime 86400
      A allowUnknownClients true
      A enabled false
N ImDhcpRelay ImDhcpRelay
      A enabled false
N ImDnsRelay ImDnsRelay
      A relayDomainName ''
N ImDnsClient ImDnsClient
N ImFireWall ImFireWall
      A security_enable false
      A firewall_level none
      A firewall_enable false
      A IDS false
      A ClearIDSBlacklist true
      A sessionlog true
      A blockinglog true
      A IntrusionLog false
```

```
N ImFwIDS ImFireWall.ImFwIDS
      A UseBlackList false
      A UseVictimProtection false
      A DosAttackBlockDuration 1800
      A ScanAttackBlockDuration 86400
      A VictimProtectionBlockDuration 600
      A MaxTcpOpenHandshakingCount 100
      A MaxPingCount 15
      A MaxICMPCount 100
N ImProcessLogFilters ImProcessLogFilters
N ImDevice ImDevice
      A saveconfig false
N ImServices ImServices
N ImService ImServices.eth1
      A creator CLI
      A description eth1
N ImEthernet ImServices.eth1.eth1
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.eth1
N ImChannels ImServices.eth1.eth1.ImChannels
N ImEtherChannel ImServices.eth1.eth1.ImChannels.item0
      A port ethernet
N ImService ImServices.ipoa-0
      A creator WebAdmin
      A description 'AP MGMT'
N ImIpoa ImServices.ipoa-0.item0
      A svc false
      A atmarp here
      A lifetime 60
      A enabled true
      A layer2SessionUser ImRouter.ImIpInterfaces.ipoa-0
N ImChannels ImServices.ipoa-0.item0.ImChannels
N ImAtmChannel ImServices.ipoa-0.item0.ImChannels.item0
      A txVci 101
      A rxVci 101
      A pcr 2000
      A class UBR
      A port atm
N ImService ImServices.ipoa-1
      A creator WebAdmin
      A description 'SU1 Data'
N ImIpoa ImServices.ipoa-1.item0
      A svc false
      A atmarp here
      A lifetime 60
      A enabled true
      A layer2SessionUser ImRouter.ImIpInterfaces.ipoa-1
N ImChannels ImServices.ipoa-1.item0.ImChannels
N ImAtmChannel ImServices.ipoa-1.item0.ImChannels.item0
      A txVci 200
      A rxVci 200
      A pcr 2000
      A class UBR
      A port atm
N ImService ImServices.ipoa-2
      A creator WebAdmin
      A description 'SU2 Data'
```

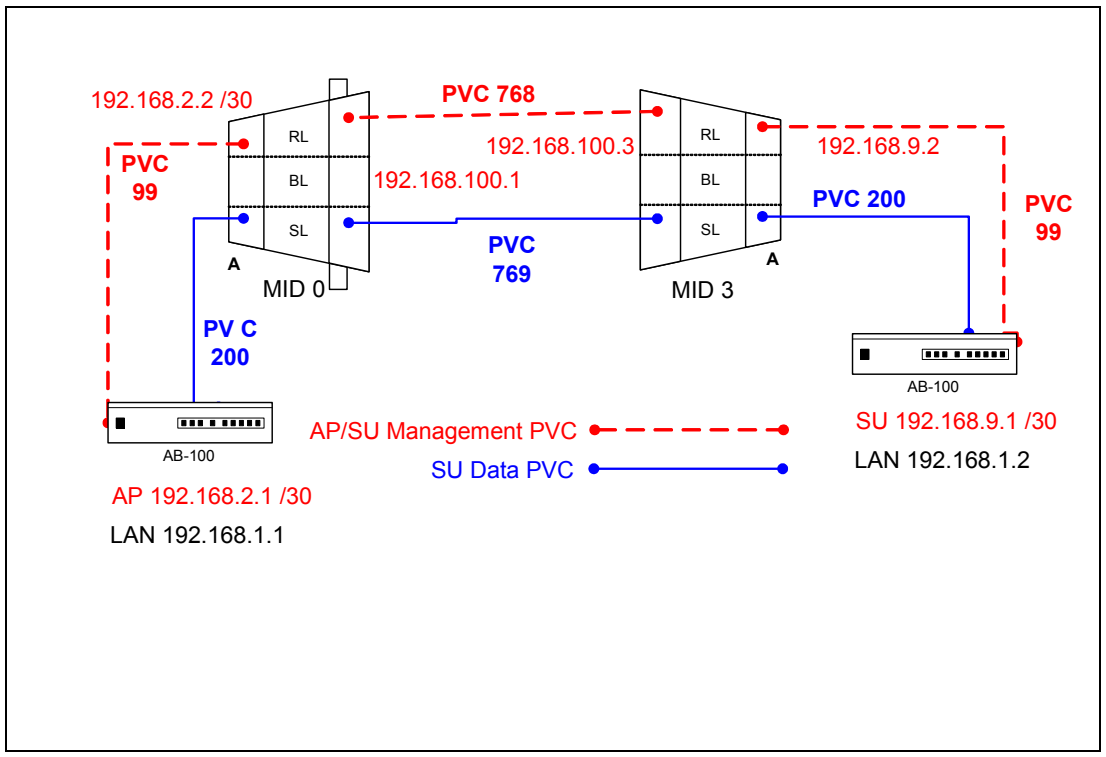
```
N ImIpoa ImServices.ipoa-2.item0
      A svc false
      A atmarp here
      A lifetime 60
      A enabled true
      A layer2SessionUser ImRouter.ImIpInterfaces.ipoa-2
N ImChannels ImServices.ipoa-2.item0.ImChannels
N ImAtmChannel ImServices.ipoa-2.item0.ImChannels.item0
      A txVci 300
      A rxVci 300
      A pcr 2000
      A class UBR
      A port atm
N ImUsers ImUsers
N ImUser ImUsers.atmos
      A username atmos
      A password atmos
      A comment 'Created by CLI'
      A accessLevel superuser
      A mayConfigure true
      A mayDialIn true
      A pppLoginAuth none
N ImRouter ImRouter
N ImIpInterfaces ImRouter.ImIpInterfaces
N ImIpInterface ImRouter.ImIpInterfaces.ip1
      A ipaddr 192.168.1.1
      A mask 255.255.255.0
      A dhcp false
      A mtu 1500
      A enabled true
      A layer2Session ImBridge
N ImTcpMssClamp ImRouter.ImIpInterfaces.ip1.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ip1.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImIpInterface ImRouter.ImIpInterfaces.ipoa-0
      A ipaddr 192.168.100.1
      A mask 255.255.255.252
      A dhcp false
      A mtu 1500
      A realInterface ''
      A enabled true
      A layer2Session ImServices.ipoa-0.item0
N ImTcpMssClamp ImRouter.ImIpInterfaces.ipoa-0.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ipoa-0.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImIpInterface ImRouter.ImIpInterfaces.ipoa-1
      A ipaddr 192.168.5.1
```

```
      A mask 255.255.255.252
      A dhcp false
      A mtu 1500
      A realInterface ''
      A enabled true
      A layer2Session ImServices.ipoa-1.item0
N ImTcpMssClamp ImRouter.ImIpInterfaces.ipoa-1.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ipoa-1.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImIpInterface ImRouter.ImIpInterfaces.ipoa-2
      A ipaddr 192.168.5.5
      A mask 255.255.255.252
      A dhcp false
      A mtu 1500
      A realInterface ''
      A enabled true
      A layer2Session ImServices.ipoa-2.item0
N ImTcpMssClamp ImRouter.ImIpInterfaces.ipoa-2.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ipoa-2.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImRoutes ImRouter.ImRoutes
N ImIpV4Route ImRouter.ImRoutes.item0
      A destination 192.168.3.64
      A gateway 192.168.5.2
      A netmask 255.255.255.248
      A cost 1
      A timeout 0
      A interface ''
      A advertise false
N ImIpV4Route ImRouter.ImRoutes.item1
      A destination 192.168.3.72
      A gateway 192.168.5.6
      A netmask 255.255.255.248
      A cost 1
      A timeout 0
      A interface ''
      A advertise false
N ImPorts ImPorts
N ethernet ImPorts.ethernet
      A resetDefaults false
N atm ImPorts.atm
      A resetDefaults false
N ImWebserver ImWebserver
      A httpPort 80
      A upnpPort 2800
      A telnetPort 23
      A interface ip1
```

```
      A enabled true
      A mgmtIp 0.0.0.0
      A archive //expand/isfs/derived_data.dat
      A enableAuxillaryPort true
# end
```

Section 9

10 AB-100 / AB-Access Native_ATM (Backhaul) System



10.1 AB-Access Configuration Files

10.1.1 AP resolve

```
device  add  atm0  atm  //bun  mtu  1500  192.168.2.2
device  add  atm1  atm  //bun  mtu  1500  192.168.100.1

subnet  add  atm0.home  .  192.168.2.0  ff:ff:ff:fc
subnet  add  atm1.home  .  192.168.100.0  ff:ff:ff:00

rip  send  all  none
rip  accept  all  none

route  add  default  0.0.0.0  192.168.2.1  00:00:00:00  1  #  MAN

relay  all

ipatm  lifetime  60
ipatm  pvc  atm0  atm25i  0/99  pcr  70000/70000  remoteip  192.168.2.1
ipatm  pvc  atm1  atm25m  0/768  pcr  70000/70000  remoteip  192.168.100.3
```

10.1.2 AP system.conf

```
channel  0
antenna  horizontal
mode  static
mid  0
bid  0
interface  atm0
backoff  0
provider  abw
key  Axxcelera
mask  1ffff
leds  active
```

10.1.3 AP initswitchcli

```
tp default UBR 70000
sp default 256 stats

add  atm25m  0  769  atm25i  0  200  default  default  perm epd
add  atm25i  0  200  atm25m  0  769  default  default  perm epd
```

10.1.4 SU resolve

```
device add atm0 atm //bun mtu 1500 192.168.9.2
device add atm1 atm //bun mtu 1500 192.168.100.3

subnet add atm1.home . 192.168.100.0 ff:ff:ff:00
subnet add atm0.home . 192.168.9.0 ff:ff:ff:fc

rip send all none
rip accept all none

route add default 0.0.0.0 192.168.100.1 00:00:00:00 1 # MAN
relay all

ipatm lifetime 60
ipatm pvc atm0 atm25i 0/99 pcr 70000/70000 remoteip 192.168.9.1
ipatm pvc atm1 atm25m 0/768 pcr 70000/70000 remoteip 192.168.100.1
```

10.1.5 SU system.conf

```
channel 0
antenna horizontal
mode static
mid 3
bid 0
interface atm0
backoff 0
provider abw
key Axxcelera
mask 1ffff
leds active
```

10.1.6 SU initswitchcli

```
tp default UBR 70000
sp default 256 stats
add  atm25m  0  769  atm25i  0  200  default  default  perm epd
add  atm25i  0  200  atm25m  0  769  default  default  perm epd
```

10.2 AB-100 icf config file(AP)

```
# Information Model configuration file

version 4
N ImIGMPProxy ImIGMPProxy
      A forwardAll false
N ImRip ImRip
      A hostRoutes false
      A poison false
      A authEnable false
      A authPassword ''
      A advertiseDefaultRoute false
      A defaultRouteCost 1
N ImBridge ImBridge
      A filterage 300
      A enabled false
      A layer2SessionUser ImRouter.ImIpInterfaces.ip1
N ImBridgeInterfaces ImBridge.ImBridgeInterfaces
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled false
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled true
      A layer2Session ImServices.eth1.eth1
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.rfc1483-0
      A etherFilterType All
      A portFilter All
      A enabled true
```

```
      A layer2Session ImServices.rfc1483-0.item0
N ImSpanningBridgeInterface ImBridge.ImBridgeInterfaces.rfc1483-
0.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImSpanningBridgeConfig ImBridge.ImSpanningBridgeConfig
      A spanning false
      A spanPriority 32768
      A helloTime 2
      A maxAge 20
      A forwardDelay 15
N ImDhcpClient ImDhcpClient
      A reboot 10
      A retry 300
      A backoffCutoff 120
N ImDhcpServer ImDhcpServer
      A defaultLeaseTime 43200
      A allowBootp true
      A maxLeaseTime 86400
      A allowUnknownClients true
      A enabled false
N ImDhcpRelay ImDhcpRelay
      A enabled false
N ImDnsRelay ImDnsRelay
      A relayDomainName ''
N ImDnsClient ImDnsClient
N ImFireWall ImFireWall
      A security_enable false
      A firewall_level none
      A firewall_enable false
      A IDS false
      A ClearIDSBlacklist true
      A sessionlog true
      A blockinglog true
      A IntrusionLog false
N ImFwIDS ImFireWall.ImFwIDS
      A UseBlackList false
      A UseVictimProtection false
      A DosAttackBlockDuration 1800
      A ScanAttackBlockDuration 86400
      A VictimProtectionBlockDuration 600
      A MaxTcpOpenHandshakingCount 100
      A MaxPingCount 15
      A MaxICMPCount 100
N ImProcessLogFilters ImProcessLogFilters
N ImDevice ImDevice
      A saveconfig false
N ImServices ImServices
N ImService ImServices.eth1
      A creator CLI
      A description eth1
N ImEthernet ImServices.eth1.eth1
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.eth1
N ImChannels ImServices.eth1.eth1.ImChannels
N ImEtherChannel ImServices.eth1.eth1.ImChannels.item0
```

```
      A port ethernet
N ImService ImServices.ipoa-0
      A creator WebAdmin
      A description 'AP MGMT'
N ImIpoa ImServices.ipoa-0.item0
      A svc false
      A atmarp here
      A lifetime 60
      A enabled true
      A layer2SessionUser ImRouter.ImIpInterfaces.ipoa-0
N ImChannels ImServices.ipoa-0.item0.ImChannels
N ImAtmChannel ImServices.ipoa-0.item0.ImChannels.item0
      A txVci 99
      A rxVci 99
      A class UBR
      A port atm
N ImService ImServices.rfc1483-0
      A creator WebAdmin
      A description DATA
N ImRfc1483 ImServices.rfc1483-0.item0
      A mode LlcBridged
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.rfc1483-0
N ImChannels ImServices.rfc1483-0.item0.ImChannels
N ImAtmChannel ImServices.rfc1483-0.item0.ImChannels.item0
      A txVci 200
      A rxVci 200
      A pcr 2000
      A class UBR
      A port atm
N ImUsers ImUsers
N ImUser ImUsers.atmos
      A username atmos
      A password atmos
      A comment 'Created by CLI'
      A accessLevel superuser
      A mayConfigure true
      A mayDialIn true
      A pppLoginAuth none
N ImRouter ImRouter
N ImIpInterfaces ImRouter.ImIpInterfaces
N ImIpInterface ImRouter.ImIpInterfaces.ip1
      A ipaddr 192.168.1.1
      A mask 255.255.255.0
      A dhcp false
      A mtu 1500
      A enabled true
      A layer2Session ImBridge
N ImTcpMssClamp ImRouter.ImIpInterfaces.ip1.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ip1.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImIpInterface ImRouter.ImIpInterfaces.ipoa-0
```

```
      A ipaddr 192.168.2.1
      A mask 255.255.255.252
      A dhcp false
      A mtu 1500
      A realInterface ''
      A enabled true
      A layer2Session ImServices.ipoa-0.item0
N ImTcpMssClamp ImRouter.ImIpInterfaces.ipoa-0.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ipoa-0.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImRoutes ImRouter.ImRoutes
N ImIpV4Route ImRouter.ImRoutes.item0
      A destination 192.168.100.0
      A gateway 192.168.2.2
      A netmask 255.255.255.0
      A cost 1
      A timeout 0
      A interface ''
      A advertise false
N ImPorts ImPorts
N ethernet ImPorts.ethernet
      A resetDefaults false
N atm ImPorts.atm
      A resetDefaults false
N ImWebserver ImWebserver
      A httpPort 80
      A upnpPort 2800
      A telnetPort 23
      A interface ip1
      A enabled true
      A mgmtIp 0.0.0.0
      A archive //expand/isfs/derived_data.dat
      A enableAuxillaryPort true
# end
```

10.3 AB-100 icf config file (SU)

```
# Information Model configuration file

version 4
N ImIGMPProxy ImIGMPProxy
      A forwardAll false
N ImRip ImRip
      A hostRoutes false
      A poison false
      A authEnable false
      A authPassword ''
      A advertiseDefaultRoute false
      A defaultRouteCost 1
N ImBridge ImBridge
```

```
      A filterage 300
      A enabled false
      A layer2SessionUser ImRouter.ImIpInterfaces.ip1
N ImBridgeInterfaces ImBridge.ImBridgeInterfaces
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled false
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.eth1
      A etherFilterType All
      A portFilter All
      A enabled true
      A layer2Session ImServices.eth1.eth1
N ImSpanningBridgeInterface
ImBridge.ImBridgeInterfaces.eth1.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImBridgeInterface ImBridge.ImBridgeInterfaces.rfc1483-0
      A etherFilterType All
      A portFilter All
      A enabled true
      A layer2Session ImServices.rfc1483-0.item0
N ImSpanningBridgeInterface ImBridge.ImBridgeInterfaces.rfc1483-
0.ImSpanningBridgeInterface
      A enabled false
      A priority 128
      A pathCost 10
N ImSpanningBridgeConfig ImBridge.ImSpanningBridgeConfig
      A spanning false
      A spanPriority 32768
      A helloTime 2
      A maxAge 20
      A forwardDelay 15
N ImDhcpClient ImDhcpClient
      A reboot 10
      A retry 300
      A backoffCutoff 120
N ImDhcpServer ImDhcpServer
      A defaultLeaseTime 43200
      A allowBootp true
      A maxLeaseTime 86400
      A allowUnknownClients true
      A enabled false
N ImDhcpRelay ImDhcpRelay
      A enabled false
N ImDnsRelay ImDnsRelay
      A relayDomainName ''
N ImDnsClient ImDnsClient
N ImFireWall ImFireWall
      A security_enable false
      A firewall_level none
```

```
      A firewall_enable false
      A IDS false
      A ClearIDSBlacklist true
      A sessionlog true
      A blockinglog true
      A IntrusionLog false
N ImFwIDS ImFireWall.ImFwIDS
      A UseBlackList false
      A UseVictimProtection false
      A DosAttackBlockDuration 1800
      A ScanAttackBlockDuration 86400
      A VictimProtectionBlockDuration 600
      A MaxTcpOpenHandshakingCount 100
      A MaxPingCount 15
      A MaxICMPCount 100
N ImProcessLogFilters ImProcessLogFilters
N ImDevice ImDevice
      A saveconfig false
N ImServices ImServices
N ImService ImServices.eth1
      A creator CLI
      A description eth1
N ImEthernet ImServices.eth1.eth1
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.eth1
N ImChannels ImServices.eth1.eth1.ImChannels
N ImEtherChannel ImServices.eth1.eth1.ImChannels.item0
      A port ethernet
N ImService ImServices.ipoa-0
      A creator WebAdmin
      A description 'SU MGMT'
N ImIpoa ImServices.ipoa-0.item0
      A svc false
      A atmarp here
      A lifetime 60
      A enabled true
      A layer2SessionUser ImRouter.ImIpInterfaces.ipoa-0
N ImChannels ImServices.ipoa-0.item0.ImChannels
N ImAtmChannel ImServices.ipoa-0.item0.ImChannels.item0
      A txVci 99
      A rxVci 99
      A class UBR
      A port atm
N ImService ImServices.rfc1483-0
      A creator WebAdmin
      A description DATA
N ImRfc1483 ImServices.rfc1483-0.item0
      A mode LlcBridged
      A enabled true
      A layer2SessionUser ImBridge.ImBridgeInterfaces.rfc1483-0
N ImChannels ImServices.rfc1483-0.item0.ImChannels
N ImAtmChannel ImServices.rfc1483-0.item0.ImChannels.item0
      A txVci 200
      A rxVci 200
      A pcr 2000
      A class UBR
      A port atm
```

```
N ImUsers ImUsers
N ImUser ImUsers.atmos
      A username atmos
      A password atmos
      A comment 'Created by CLI'
      A accessLevel superuser
      A mayConfigure true
      A mayDialIn true
      A pppLoginAuth none
N ImRouter ImRouter
N ImIpInterfaces ImRouter.ImIpInterfaces
N ImIpInterface ImRouter.ImIpInterfaces.ip1
      A ipaddr 192.168.1.2
      A mask 255.255.255.0
      A dhcp false
      A mtu 1500
      A enabled true
      A layer2Session ImBridge
N ImTcpMssClamp ImRouter.ImIpInterfaces.ip1.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ip1.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImIpInterface ImRouter.ImIpInterfaces.ipoa-0
      A ipaddr 192.168.9.1
      A mask 255.255.255.252
      A dhcp false
      A mtu 1500
      A realInterface ''
      A enabled true
      A layer2Session ImServices.ipoa-0.item0
N ImTcpMssClamp ImRouter.ImIpInterfaces.ipoa-0.ImTcpMssClamp
      A enabled false
N ImRipVersions ImRouter.ImIpInterfaces.ipoa-0.ImRipVersions
      A acceptV1 false
      A acceptV2 false
      A sendV1 false
      A sendV2 false
      A sendMulticast false
N ImRoutes ImRouter.ImRoutes
N ImIpV4Route ImRouter.ImRoutes.item0
      A destination 192.168.100.0
      A gateway 192.168.9.2
      A netmask 255.255.255.0
      A cost 1
      A timeout 0
      A interface ''
      A advertise false
N ImPorts ImPorts
N ethernet ImPorts.ethernet
      A resetDefaults false
N atm ImPorts.atm
      A resetDefaults false
N ImWebserver ImWebserver
```

```
      A httpPort 80
      A upnpPort 2800
      A telnetPort 23
      A interface ip1
      A enabled true
      A mgmtIp 0.0.0.0
      A archive //expand/isfs/derived_data.dat
      A enableAuxillaryPort true
# end
```

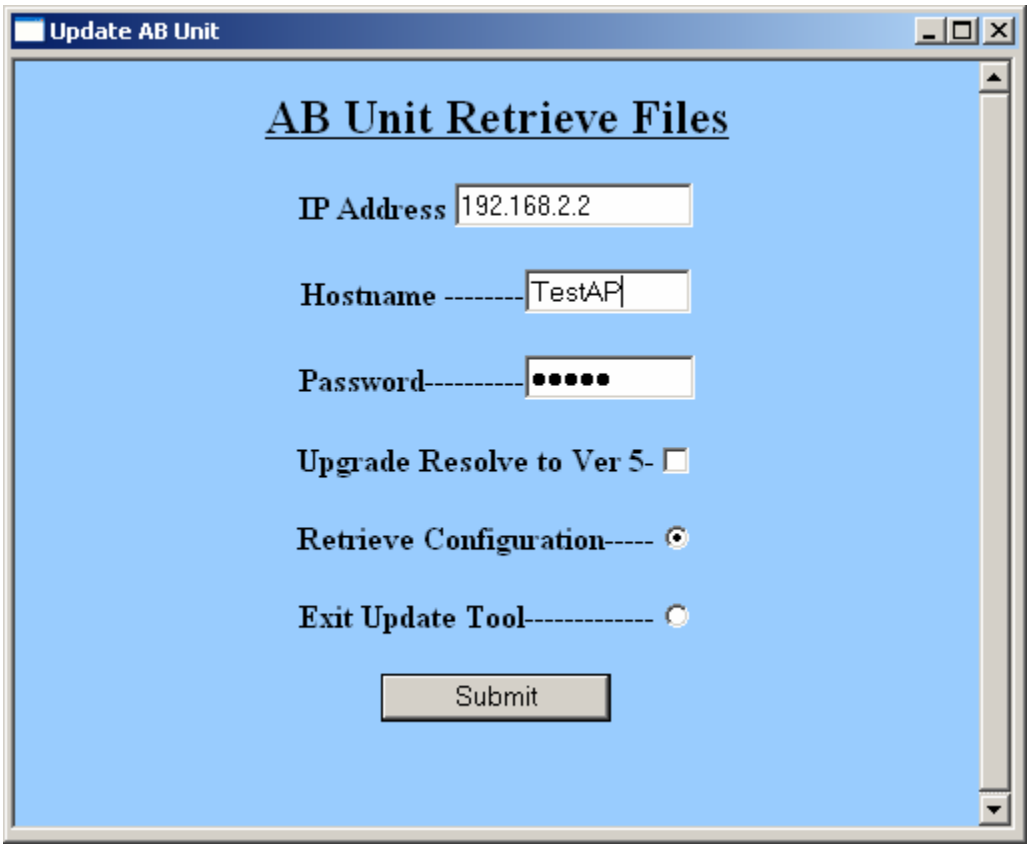
Section 10

11 Converting to ATM

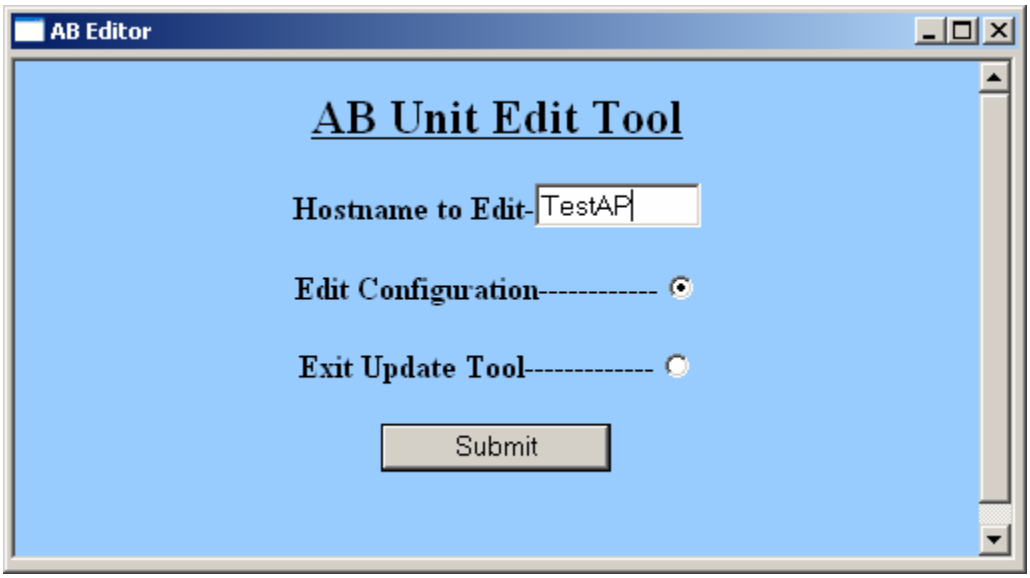
Before you install the AB-100 at an existing sector you will need to convert the AP from a terminated Ethernet configuration to an ATM configuration. All of these configuration changes will be done on the AP and are slightly different for CLIP_T, CLIP_S and 1483_S modes. All instructions use the *AB-Express* tool. For further instructions on how to use this tool refer to the *AB-Express User Manual*.

11.1 CLIP_T

1. Open Retrieve AB Configuration.
2. Fill in current IP address of unit.
3. Enter the hostname that you want to refer to this unit by.
4. Enter the current password of the unit.
5. Select Retrieve Configuration.
6. Click on *Submit*.



7. Open Edit AB Configuration.
8. Fill in *Hostname* of AP that you want to edit.
9. Select *Edit Configuration*.

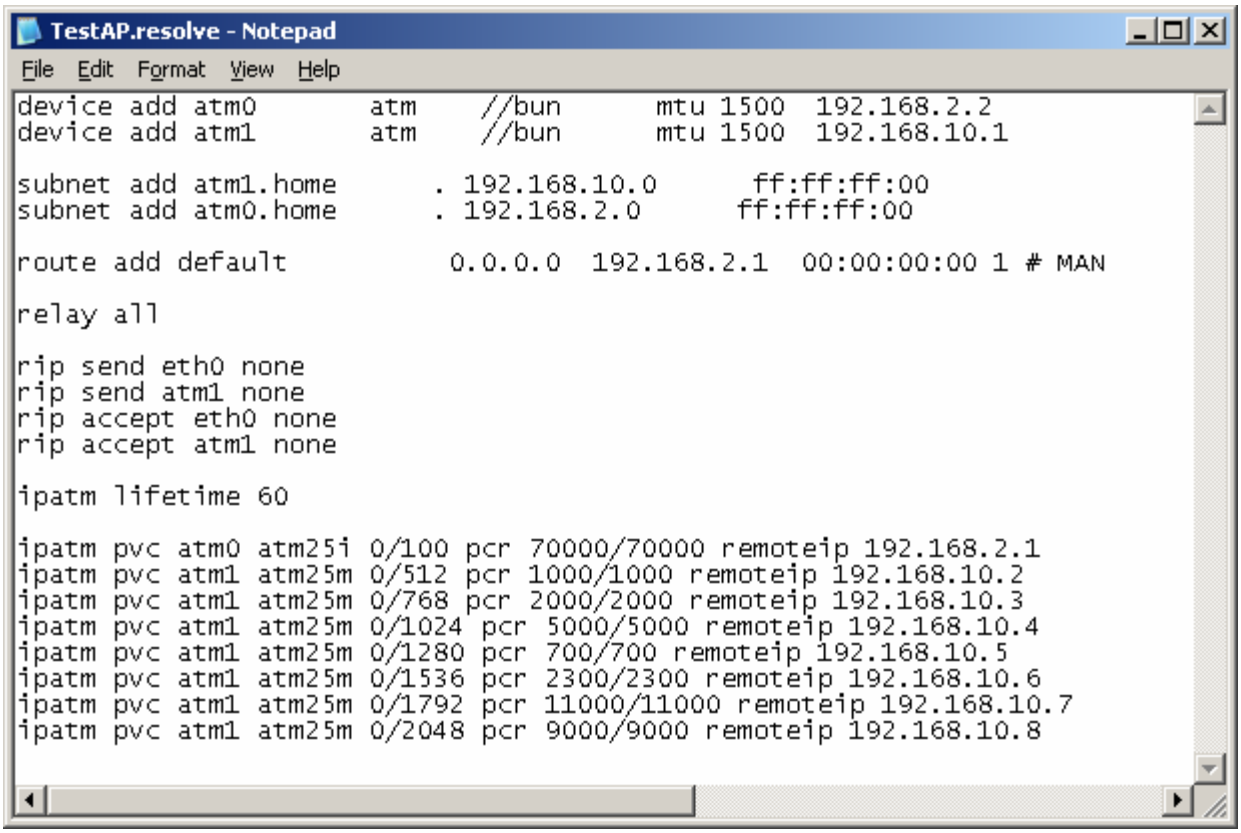


10. Click on *Submit*.
11. Edit the resolve file by changing the following lines…
    a. Device
        - **OLD:** device add **eth0** **ether** //**edd** mtu 1500 192.168.2.2
        - **New:** device add **atm0** **atm** //**bun** mtu 1500 192.168.2.2

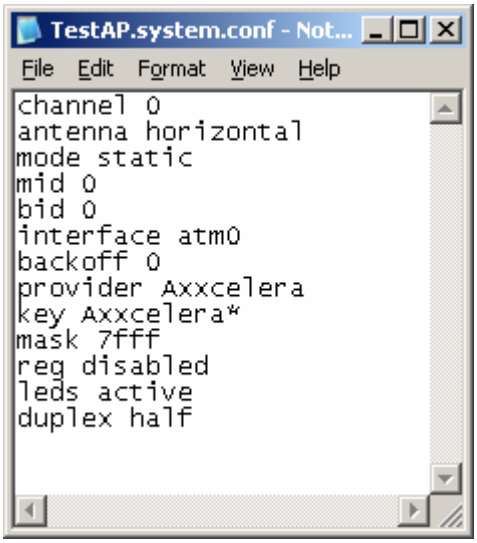
    b. Subnet
        - **OLD:** subnet add eth0.home . 192.168.2.0 ff:ff:ff:00
        - **New:** subnet add atm0.home . 192.168.2.0 ff:ff:ff:00

    c. Ipatm pvc
        - **Add:** ipatmpvc add atm0 atm25m 0/100 pcr 70000/70000 remoteip 192.168.2.1

    d. Relay
    If the unit *relay all* then nothing needs to be changed. If the unit specifies specific devices all relays need to be deleted and add relay all.
        - **Old:** relay eth0 eth0
          relay eth0 atm1
          relay atm1 atm1
        - **New:** relay all

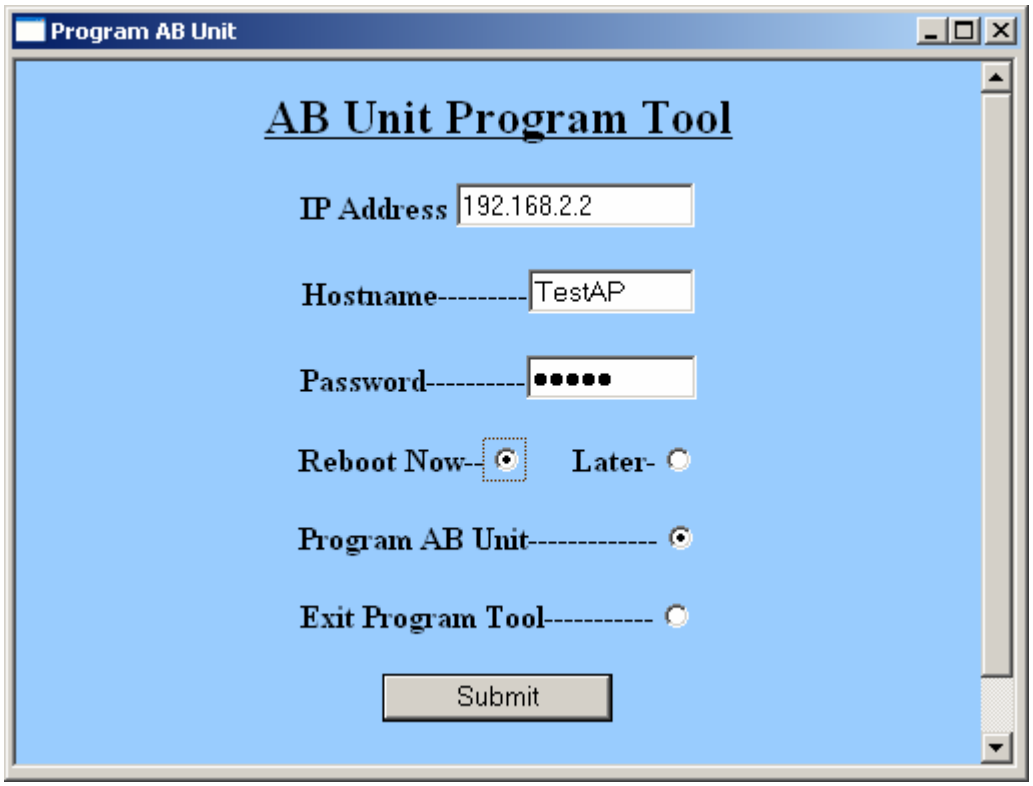

TestAP.resolve - Notepad
File Edit Format View Help
device add atm0 atm //bun mtu 1500 192.168.2.2
device add atm1 atm //bun mtu 1500 192.168.10.1
subnet add atm1.home . 192.168.10.0 ff:ff:ff:00
subnet add atm0.home . 192.168.2.0 ff:ff:ff:00
route add default 0.0.0.0 192.168.2.1 00:00:00:00 1 # MAN
relay all
rip send eth0 none
rip send atm1 none
rip accept eth0 none
rip accept atm1 none
ipatm lifetime 60
ipatm pvc atm0 atm25i 0/100 pcr 70000/70000 remoteip 192.168.2.1
ipatm pvc atm1 atm25m 0/512 pcr 1000/1000 remoteip 192.168.10.2
ipatm pvc atm1 atm25m 0/768 pcr 2000/2000 remoteip 192.168.10.3
ipatm pvc atm1 atm25m 0/1024 pcr 5000/5000 remoteip 192.168.10.4
ipatm pvc atm1 atm25m 0/1280 pcr 700/700 remoteip 192.168.10.5
ipatm pvc atm1 atm25m 0/1536 pcr 2300/2300 remoteip 192.168.10.6
ipatm pvc atm1 atm25m 0/1792 pcr 11000/11000 remoteip 192.168.10.7
ipatm pvc atm1 atm25m 0/2048 pcr 9000/9000 remoteip 192.168.10.8

12. Edit the system.conf file with the following changes…
    a. Interface
        - **Old:** interface eth0
        - **New:** interface atm0



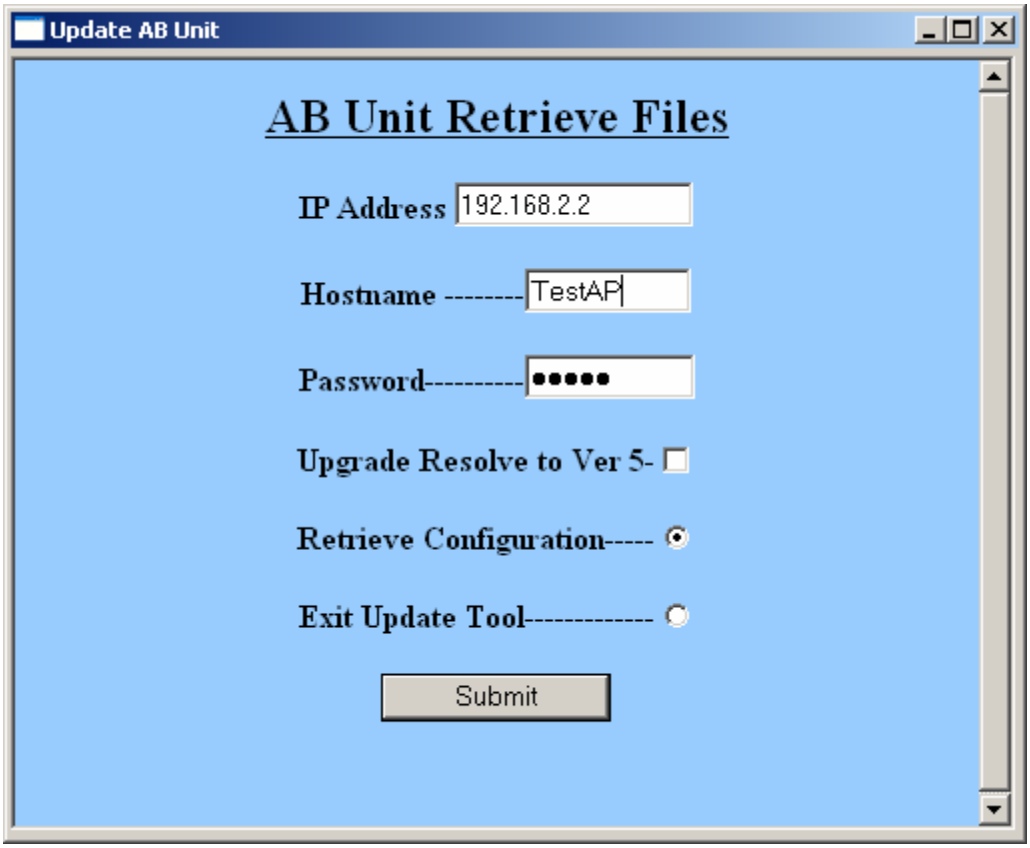
13. Once files are edited and saved they are ready to upload to the AP by using Program AB Unit.

14. Fill in the current IP address.
15. Enter the Hostname for the modified files.
16. Fill in the current unit password.
17. Select Reboot Now.
18. Click on *Submit*.

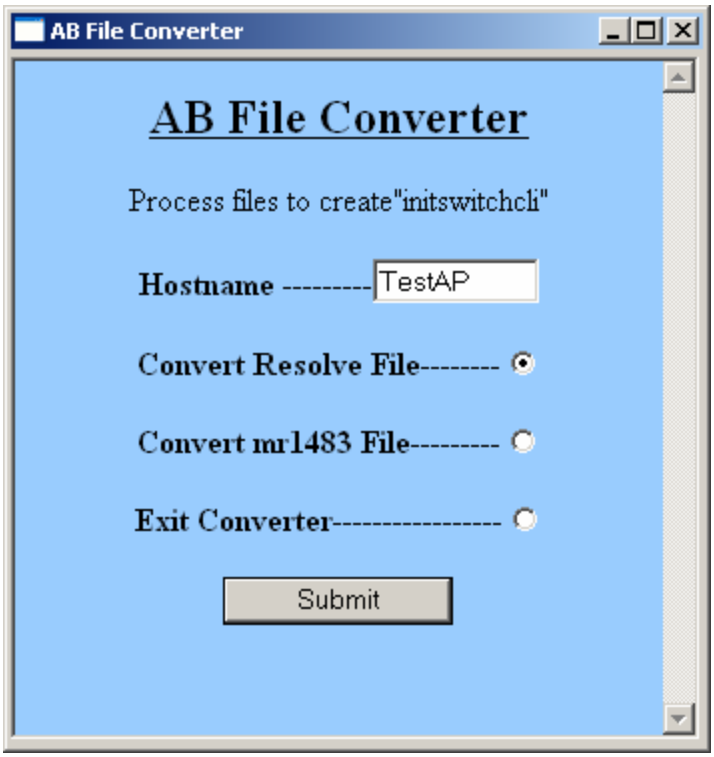


11.2 CLIP_S

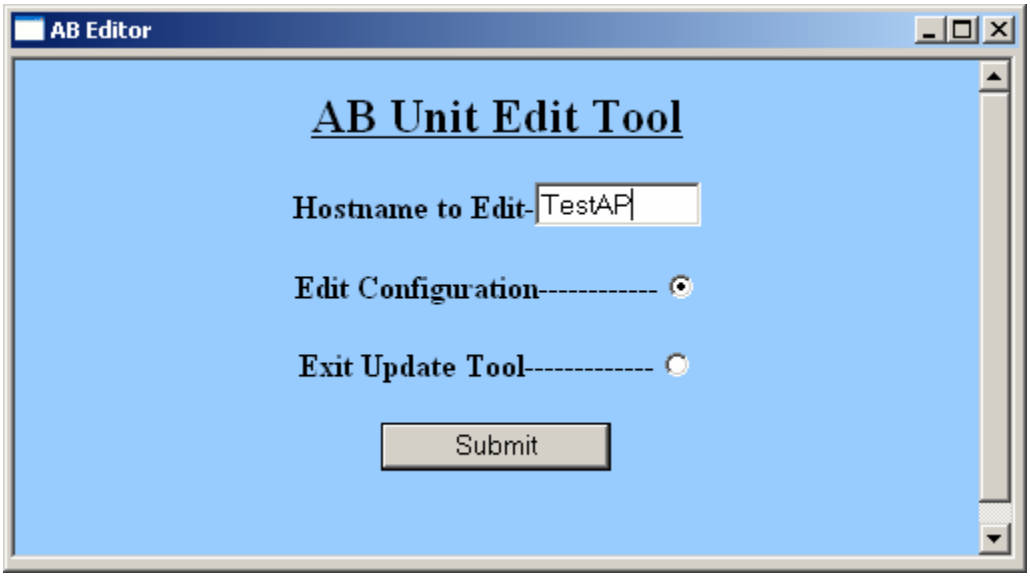
1. Setup the AB-100 with all necessary configuration information.
2. Change all IP addresses information on all SUs in the sector. All wireless SU IP addresses will need to be changed. The reason for this is that AB-100 can only bind 1 PVC to an IP address, so each SU must be on a separate subnet and terminated on a different interface on AB-100. Contact your Axxcelera representative before converting to CLIP_S if you do not fully understand how the IP addresses must be assigned.
3. Open Retrieve AB Configuration.
4. Fill in current IP address of unit.
5. Enter the hostname that you want to refer to this unit by.
6. Enter the current password of the unit.
7. Select Retrieve Configuration.
8. Click on *Submit*.



9. Convert the ipatm pvc information in the resolve file to the initswitchcli file. This is done by the *AB File Converter* tool.
10. Fill in *Hostname* of AP that you want to convert.
11. Select *Convert Resolve File*.



12. Click on *Submit*.
13. Open Edit AB Configuration.
14. Fill in *Hostname* of AP that you want to edit.
15. Select *Edit Configuration*.



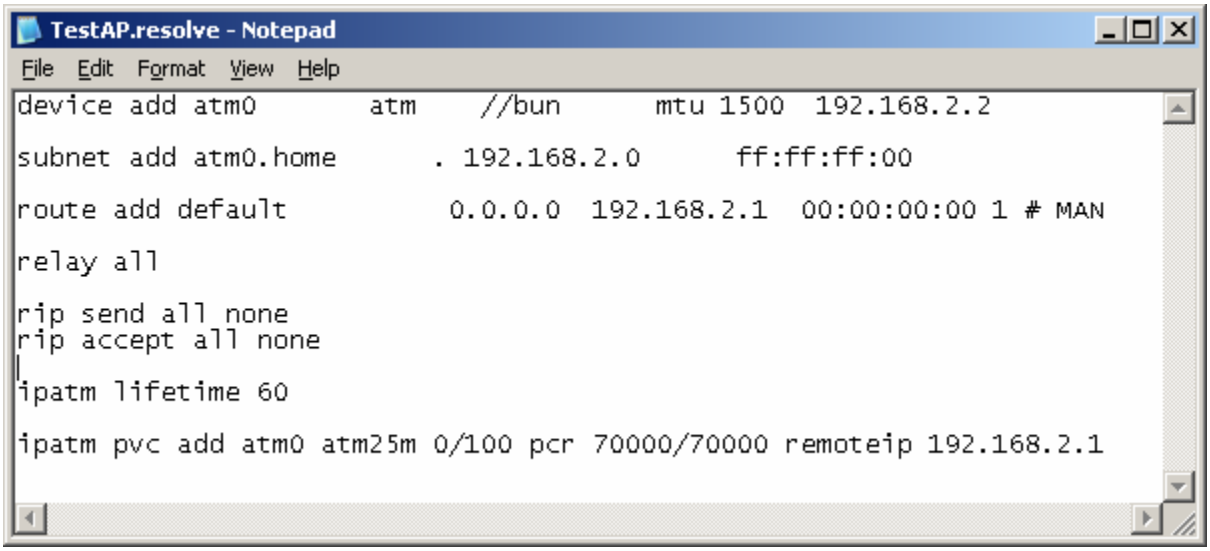
16. Click on *Submit*.
17. Edit the resolve file by changing the following lines…
    a. Device
        - **OLD:** device add **eth0** **ether** //**edd** mtu 1500 192.168.2.2

- **New:** device add **atm0** **atm** //**bun** mtu 1500 192.168.2.2
- **Delete:** device delete atm1

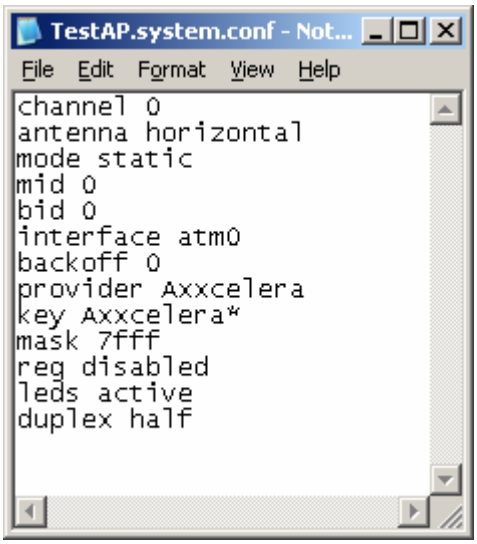
b. Subnet
- **OLD:** subnet add eth0.home . 192.168.2.0 ff:ff:ff:00
- **New:** subnet add atm0.home . 192.168.2.0 ff:ff:ff:00
- **Delete:** subnet delete atm0.home

c. Ipatm pvc
- **Add:** ipatm pvc add atm0 atm25m 0/100 pcr 70000/70000 remoteip 192.168.2.1

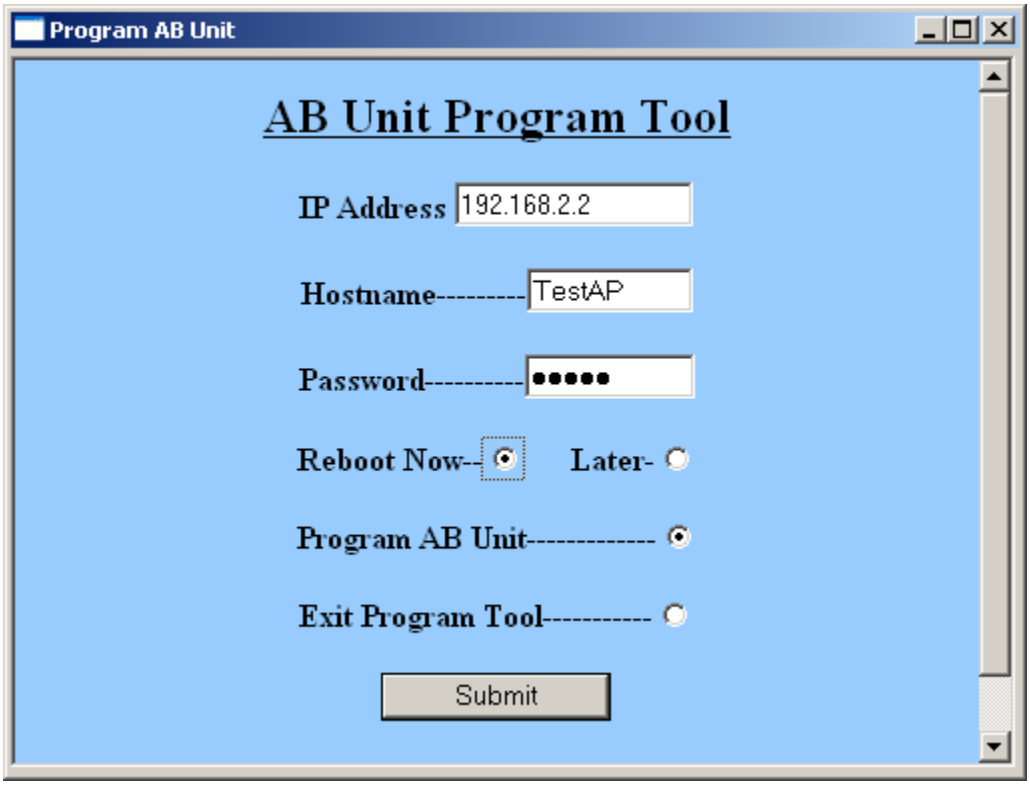
e. Relay
If the unit *relay all* then nothing needs to be changed. If the unit specifies specific devices all relays need to be deleted and add relay all.
- **Old:** relay eth0 eth0
  relay eth0 atm1
  relay atm1 atm1
- **New:** relay all


TestAP.resolve - Notepad
File Edit Format View Help
device add atm0 atm //bun mtu 1500 192.168.2.2
subnet add atm0.home . 192.168.2.0 ff:ff:ff:00
route add default 0.0.0.0 192.168.2.1 00:00:00:00 1 # MAN
relay all
rip send all none
rip accept all none
ipatm lifetime 60
ipatm pvc add atm0 atm25m 0/100 pcr 70000/70000 remoteip 192.168.2.1

18. Edit the system.conf file with the following changes…
    a. Interface
    - **Old:** interface eth0
    - **New:** interface atm0

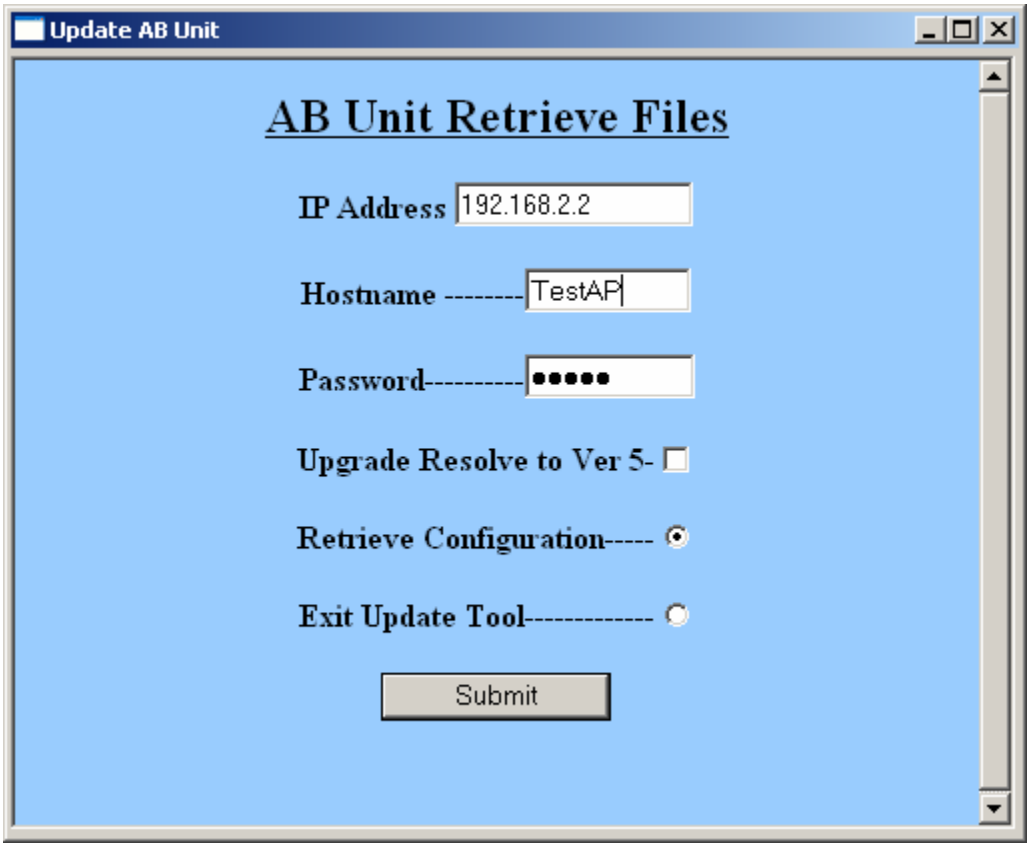


17. Once files are edited and saved they are ready to upload to the AP by using Program AB Unit.
18. Fill in the current IP address.
19. Enter the Hostname for the modified files.
20. Fill in the current unit password.
21. Select Reboot Now.
22. Click on *Submit*.

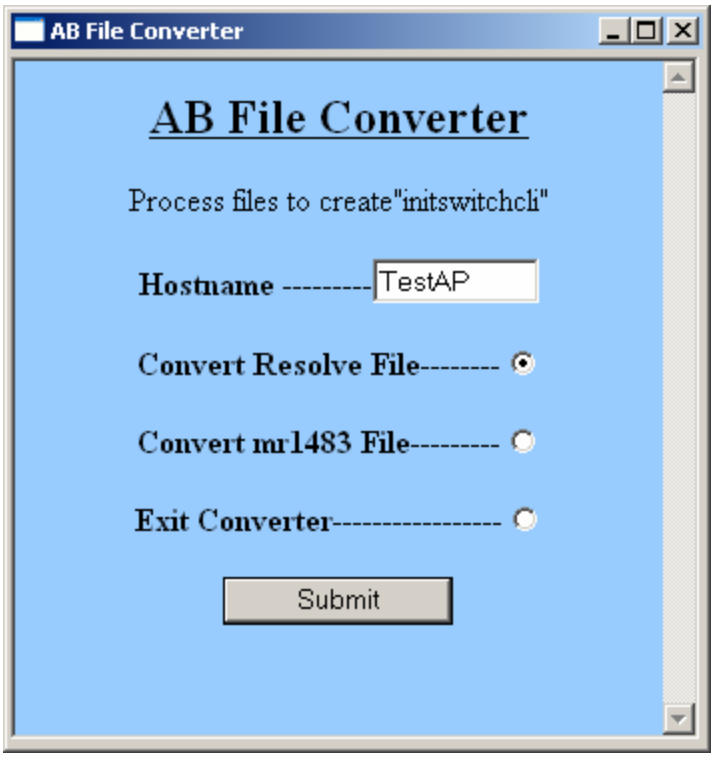


11.3 1483_S

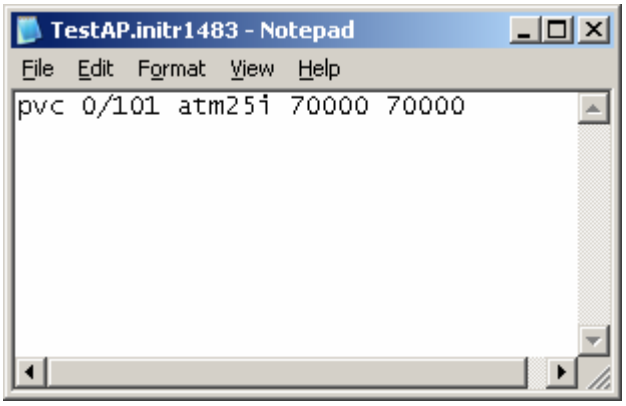
1. Open Retrieve AB Configuration.
2. Fill in current IP address of unit.
3. Enter the hostname that you want to refer to this unit by.
4. Enter the current password of the unit.
5. Select Retrieve Configuration.
6. Click on *Submit*.



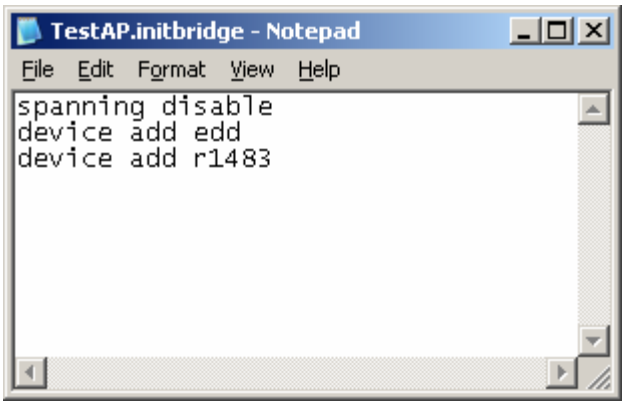
7. Convert the mr1483 information in the initmr1483 file to the initswitchcli file. This is done by the *AB File Converter* tool.
8. Fill in *Hostname* of AP that you want to convert.
9. Select *Convert mr1483 File*.



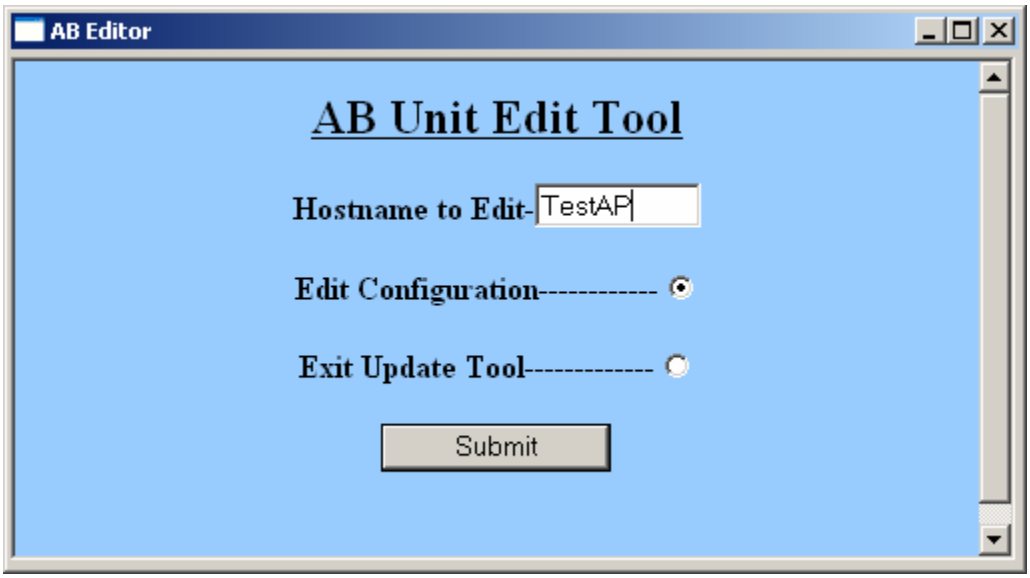
10. Click on *Submit*.
11. Create the file TestAP.initr1483.



12. Create the file TestAP.initbridge.

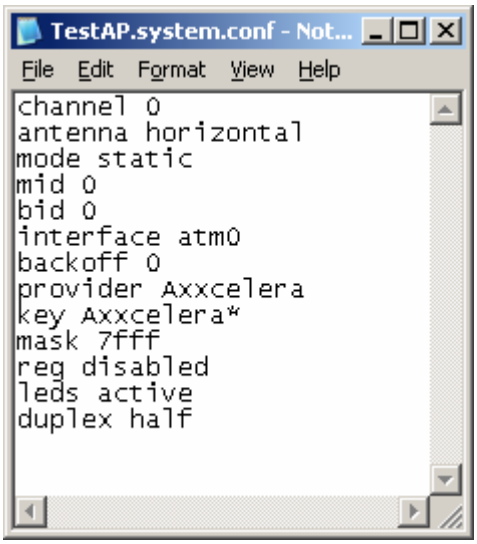


13. Select *Edit Configuration*.

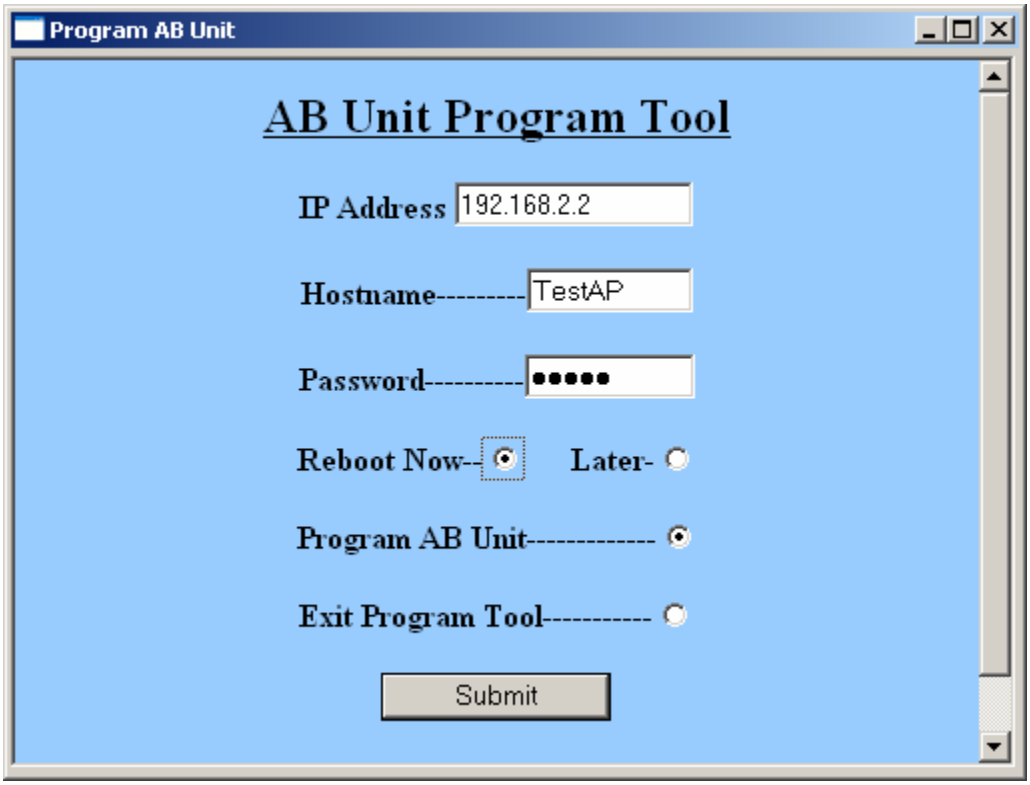


14. Click on *Submit*.

15. Edit the system.conf file with the following changes…
    a. Interface
        - **Old:** interface eth0
        - **New:** interface atm0



17. Once files are edited and saved they are ready to upload to the AP by using Program AB Unit.
18. Fill in the current IP address.
19. Enter the Hostname for the modified files.
20. Fill in the current unit password.
21. Select Reboot Now.
22. Click on *Submit*.

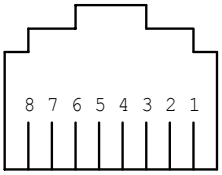


Section 12

12 Appendix

12.1 Ethernet port

RJ-45 Female

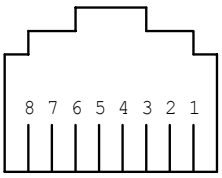


PIN	TYPE	SIGNAL
1	OUTPUT	RX+
2	OUTPUT	RX-
3	INPUT	TX+
4	N/A	N/A
5	N/A	N/A
6	INPUT	TX-
7	N/A	N/A
8	N/A	N/A

12.2 Ethernet cables

12.2.1 Straight

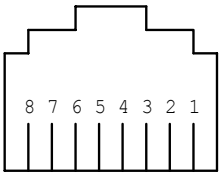
RJ-45 Male



PIN	SIGNAL	Direction	PIN
1	TX+	→	1
2	TX-	→	2
3	RX+	←	3
4	N/A		4
5	N/A		5
6	RX-	←	6
7	N/A		7
8	N/A		8

12.2.2 Cross-Over

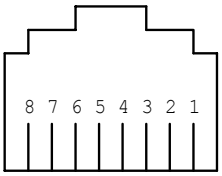
RJ-45 Male



PIN	SIGNAL	Direction	PIN
1	TX+	→	3
2	TX-	→	6
3	RX+	←	1
4	N/A		4
5	N/A		5
6	RX-	←	2
7	N/A		7
8	N/A		8

12.3 ATM port

RJ-45 Female

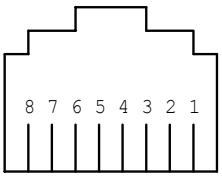


PIN	TYPE	SIGNAL
1	INPUT	RX+
2	INPUT	RX-
3	N/A	N/A
4	N/A	N/A
5	N/A	N/A
6	N/A	N/A
7	OUTPUT	TX+
8	OUTPUT	TX-

12.4 ATM cables

12.4.1 Straight

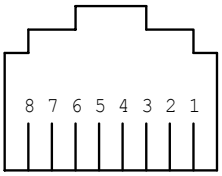
RJ-45 Male



PIN	SIGNAL	Direction	PIN
1	RX+	←	1
2	RX-	←	2
3	N/A		3
4	N/A		4
5	N/A		5
6	N/A		6
7	TX+	→	7
8	TX-	→	8

12.4.2 Cross-Over

RJ-45 Male



PIN	SIGNAL	Direction	PIN
1	RX+	←	7
2	RX-	←	8
3	N/A		3
4	N/A		4
5	N/A		5
6	N/A		6
7	TX+	→	1
8	TX-	→	2